

saj aro samarTI is iuridiul i piris _ andria razmaZis maTematikis institutis 2007 wl is samecniero saqmianobis a n g a r i S i

andria razmaZis maTematikis institutSi aris cxra samecniero ganyofil eba: al gebris, maTematikuri l ogikis, geometria-topol ogiis, maTematikuri anal izis, diferencial uri gantol ebebis, maTematikuri fizikis, drekadobis maTematikuri Teoriis, Teoriul i fizikis, al baTobis Teoriisa da maTematikuri statistikis.

2007 wl is 31 dekembris monacemebiT institutSi iricxeba 68 mecnier-TanamSromel i, maT Soris 36 fizika-maTematikis mecnierebaTa doqtori (3 saqarTvel os mecnierebaTa akademiis akademikosi da 2 wevr-korespondenti) da 30 fizika-maTematikis mecnierebaTa kandidatia.

institutSi 2007 wl is sabiuj eto programis mixedviT muSavdeboda 9 samecniero Tema:

programa # 1: "homotopiuri da kategoriul i al gebris zogierTi sakiTxi" (programis koordinatori _ al gebris ganyofil ebis gamge, mTavari mecnier-TanamSromel i, akademikosi xvedri inasariZe);

programa # 2: "intuicionisturi l ogikisa da modal uri sistemebis semantikuri anal izi" (programis koordinatori _ maTematikuri l ogikis ganyofil ebis gamge, ufrosi mecnier-TanamSromel i, fizika-maTematikis mecnierebaTa kandidati l eo esakia);

programa # 3: "topol ogiur sivrceTa al gebrul i model ebi da maTi gamoyenebani" (programis koordinatori _ geometria-topol ogiis ganyofil ebis gamge, ufrosi mecnier-TanamSromel i, fizika-maTematikis mecnierebaTa doqtori Tornike qadeiSvil i);

programa # 4: "integral uri operatorebi funqciur sivrceebSi. harmoniul da anal izur funqciaTa sasazRvro amocanebi" (programis koordinatori _ maTematikuri anal izis ganyofil ebis gamge, mTavari mecnier-TanamSromel i, saqarTvel os mecnierebaTa akademiis wevr-korespondenti vaxtang kokil aSvil i);

programa # 5: "aral okal uri da sawyisi amocanebi Cveul ebrivi da hiperbol uri tipis kerZowarmoebul ebiani gantol ebebisatvis" (programis koordinatori _ diferencial uri gantol ebebis ganyofil ebis gamge, mTavari mecnier-TanamSromel i, akademikosi ivane kiRuraZe);

programa # 6: "drekadobis Teoriis nawil obriv ucnohsazRvriani da sakontaqto amocanebi; fil traciis Teoriis sivrciTi RerZsimetriul i nawil obriv ucnohsazRvriani amocanebi da bl anti arakumSvadi siTxis brunviT warmoqmnil i reJimebi" (programis koordinatori _ drekadobis maTematikuri Teoriis ganyofil ebis gamge, mTavari mecnier-TanamSromel i, saqarTvel os mecnierebaTa akademiis wevr-korespondenti revaz bancuri);

programa # 7: "zogierTi drekadi kompozituri sxel is maTematikuri model is gamokvl eva" (programis koordinatori _ maTematikuri fizikis ganyofil ebis gamge, mTavari mecnier-TanamSromel i, fizika-maTematikis mecnierebaTa doqtori rol and duduCava);

programa # 8: "kvanturi vel ebis Teoriisa da mis gamoyenebasTan dakavSirebul i maTematikuri amocanebis kvl eva" (programis koordinatori _ Teoriul i fizikis ganyofil ebis gamge, ufrosi mecniere-TanamSromeli, fizika-matematikis mecnierebaTa doqtori merab eliasvili);

programa # 9: "martvis Teoriisa da statistikis martingal uri metodebis gamoyeneba finansur analizsi" (programis koordinatori _ albatobis Teoriisa da matematikuri statistikis ganyofil ebis gamge, ufrosi mecniere-TanamSromeli, fizika-matematikis mecnierebaTa doqtori Teimuraz toronjaze).

2007 wels institutsi musavdeboda saqartvel os erovnul i samecniero fondis grantebit dafinansebul i 9 samecniero Tema. amatgan dasrul da musaoba 2 Temaze.

2007 wels institutsi musavdeboda agreTve ucxouri grantebit dafinansebul i samecniero Temebi.

1. Ziritadi samecniero Sedegebis mokle daxasiaTeba

matematikuri analizi

Temis dasaxel eba: "integral uri operatorebi funqciur sivrceebSi. harmoniul da analizur funqciaTa sasazRvro amocanebi"

koordinatori: vaxtang kokiliasvili

hardi-l itl vudis maqsimal uri funqciebisatvis dadgenilia orwoniანი utol obis martebul obis kriteriumi l ebegis cvl admacvenebl ian sivrceebSi [60].

ganvitarebul iqna operatorTa eqstrapolaciis axali aspektebi. Tu Tavdapirvel ad Cafiqrebul i iyo eqstrapolaciis metodis ganzogadoeba naxevradwrfivi operatorebisatvis wonian l ebegis sivrceebSi cvl adi macvenebl ebit, gamokvl evis procesi armoCnda, rom eqstrapolaciis ideis ganvitareba SeiZl eba gacil ebit zogad situaciaSi. Semusavda iseti metodi, romel mac mogvca garRvevis Sesazl ebl oba ori mimartul ebit: mnisvnel ovnad gafarTovda dasasvebi wonebis kl asebi SemosazRvrul obis TeoremebSi cvl admacvenebl ian l ebegis sivrceebisatvis da SemosazRvrul i integral uri da furies operatorTa kl asebi [66].

ganzogadoebul iqna kal deron-zigmundis cnobili Teorema puasonis gantol ebis amoxsnadobisa da amonaxsnebisა da mati warmoebul ebis normit Sefasebis Sesaxeb. am mimartul ebit napovnia optimal uri pirobebi wonata sameul isatvis, romel ic uzrunvel yofs kal deron-zigmundis Teoremis gafarToebas cvl admacvenebl ian l ebegis woniani sivrceebisatvis [65].

ergodul i hil bertis gardaqmnisatvis ganzogadebul ia risi-zigmundis kl asikuri Teorema [24].

miRebul ia risis "amomaval i mzis" l emis ganzogadoeba nebismieri borel is zomebisatvis da mocemul ia misi zogierTi gamoyeneba [22].

Seswavi l iqna fardobitad zomadi simravlis (funqciis) cneba da misi sapirispiro absoluturad arazomadi simravlis (funqciis) cneba. nacvenebl iyo, rom am koncefciebis terminebSi ufro bunebrivad da moxerxebul ad formulirdeba zomis Teoriis mteli rigi debul ebebisა. miRebul i iyo fardobitad zomadi funqciebis sxvadasxva tipis daxasiaTeba zomata mnisvnelovani kl asebis mimart. saxel dobr, sigma-sasrul i uwyveti

borel is zomebis gasrul ebaTa kl asisaTvis damtkicda, rom mocemul i funqcia aris fardobiTad zomadi am kl asis mimarT maSin da mxol od maSin, roca igi warmodgenadia ori funqciis kompoziciis saxiT, sadac pirvel i funqcia zomadia l ebegis azriT, xol o meore funqcia borel is azriT zomadi bieqciaa. es Sedegi gamoyenebul iqna bernSteinis tipis simravl eebisadmi da serpinski-zigmundis tipis funqciebis Tvissebebis Sesaswavl ad [134].

Seswavl il ia mraval ganzomil ebiani gul iani integral uri operatorebiT SemosazRvrul obisa da kompaqturobis sakiTxebi [3].

dadgenil ia karl esonis wirebze gansazRvrul i maqsimal uri funqciebisa da metrikul sivrceebze singul arul integral Ta SemosazRvrul obis kriteriუმები l ebegis wonian sivrceebSi cvl adi maCvenebl ebiT [63,64,149,150].

Seswavl il ia smirnovis cvl admaCvenebl iani kl asis anal izuri funqciebis pol inomuri miaxl oebis sakiTxebi. dadgenil ia aproqsimaciis Teoriis pirdapiri da Sebrunebul i utol obebi [35].

miRebul ia matric-funqciebis speqtral uri faqtorizaciis anal izuri damtkiceba [115,117].

gamokvl eul ia Sereul i tipis amocana smirnovis kl asis harmoniul i funqciebisaTvis uban-uban l iapunovis wiriT SemosazRvrul areebSi [52].

SemoRebul ia harmoniul funqciaTa smirnovis tipis woniani kl asi. am kl asis funqciebisaTvis damaxasiaTebel ia arsebiTad gansxvavebul i yofaqceva sazRvris ori sxvadasxva ubnis maxl obl ad, roml ebic rkal Ta sasruli gaertianebebia. amastan, am rkal Ta bol oebi da sazRvris kuTxuri wertil ebi woniTi funqciebis gansakuTrebul wertil Ta simravl eSi Sedian. damtkicebul ia, rom SemoRebul i kl asis funqciebs aqvT sasazRvro mniSvnel obebi. amave dros sasazRvro funqcia sazRvris erT ubanze jamebadia erTze met xarixSi, damatebiT nawil ze ki absol uturad uwyvetia, roml is warmoebul ic aseve ekuTvnis l ebegis sivrces erTze meti maCvenebl iT. anal ogiuri Tvissebebi gaaCniaT SeuRi ebul harmoniul funqciebsac. naCvenebia, rom wris SemTxvevaSi am kl asis funqciebi warmoidginebian puasonis integral iT [52].

mraval i kompl eqsuri cvl adis kompl eqsuri funqciebisaTvis damtkicebul ia C^n _diferencirebadobis aucil ebel i da sakmarisi pirobebi, romel - Ta Sedegia hartogsis cnobil i Teorema [18].

kvaternionul i cvl adis kvaternionul i funqciebisTvis SemoRebul ia warmoebul is misaRebi cneba, dadgenil ia gawarmoebis wesebi da damtkicebul ia am warmoebul is arseboba ZiriTadi el ementarul i funqciebisaTvis [18].

fiuteris azriT marj venaregul arul i kvaternionul i funqciisTvis miRebul ia ori kompl eqsuri cvl adiT integral uri warmodgena da xarixovani gamwkriveba. dadgenil ia kvaternionul i xarixovani mwkrivis koeficientebis gamosaTvl el i formul ebi [18].

diferencial uri gantol ebebi

Temis dasaxel eba: "aral okal uri da sawyisi amocanebi Cveul ebrivi da hiperbol uri tipis kerZwarmoebul ebiani gantol ebebisaTvis"

koordinatori: ivane kiRuraZe

dadgenil ia garkveul i azriT optimal uri pirobebi, roml ebic saTanadod uzrunvel yofen:

a) integral urpirobekiani aral okal uri sasazRvro amocanebis cal saxad amoxsnadobas Cveul ebriv wrfiv diferencial ur gantol ebaTa organzamil ebiani sistemebisaTvis [138];

b) orwertil ovani arawrfivi amocanebis dadebiTi amonaxsnebis arseboba da erTaderTobas emden-faul eris tipis diferencial uri sistemebisaTvis [107];

g) dirixl esa da neimanis rezonansul i amocanebis amoxsnadobasa da cal saxad amoxsnadobas meore rigis arawrfivi Cveul ebrivi diferencial uri gantol ebebisaTvis [159];

d) aral okal uri amocanebis cal saxad amoxsnadobas ganzogadoebul wrfiv diferencial ur gantol ebaTa singul arul i sistemebisaTvis [89].

vel is kvanturi Teoriis arawrfivi sivrciTi samganzomil ebiani tal - Ris gantol ebisaTvis Seswavl il ia koSis maxasiaTebel i amocana momavl is konusSi [45].

born-infel dis operatoriani kvaziwrfivi hiperbol uri gantol ebebisaTvis dadgenil ia Tavisufal sazRvriani daxril warmoebul iani amocanis fredhol mis azriT amoxsnadobis sakmarisi pirobebi [122].

xarixovani arawrfivobis Semcvel i tal Ris erTganzomil ebiani gantol ebisaTvis dadgenil ia darbus pirvel i amocanis gl obal uri amonaxsnis arsebobis, ararsebobis, erTaderTobisa da araerTaderTobis pirobebi da gamokvl eul ia amonaxsnis diferencial uri Tvisebebi [127].

maTematikuri fizika da drekadobis maTematikuri Teoria

Temis dasaxel eba: "zogierTi drekadi kompozituri sxoul is maTematikuri model is gamokvl eva"

koordinatori: rol and duduCava

rTul i struqturis piezoel eqtrul i kompozituri tipis sxoul ebisTvis maTematikurad Camoyal ibda urTierTqmedebis pirobebi sasazRvro da sasazRvro-sakontaqto pirobebis saxiT Termul i efeqtebis gaTval iswinebiT. statikisa da fsevdorxevis sasazRvro-sakontaqto amocanebisTvis damtkicda amonaxsnis arseboba da erTaderToba, miRebul iqna amonaxsnis war-modgena potencial is tipis integral ebiT [102].

dadginda meqanikuri Zabvebisa da el eqtrul i vel is singul arobebi da asimptotika sakontaqto sazRvarze da piezoel eqtrul i sxoul is SigniT moTavsebul i bzarebis kideebis midamoSi, agreTve im gansakuTrebul i wirebis midamoSi, sadac icvl eba sasazRvro an sakontaqto pirobebi. gansakuTrebul i wirebis midamoSi gamokvl eul ia Zabvebis koncentracia da dadgenil ia maTi singul arobis maCvenebel i. model uri amocanebisTvis Catarebul i ricxviTi eqsperimentebis saSual ebiT moxda meqanikuri Zabvebisa da el eqtrul i vel is singul arobis maCvenebel ebis kompozituri sxoul is Termoel eqtromeqanikur koeficientebze damokidebul ebis il ustrireba [14,103].

variაციul i meTodebis gamoyenebiT damtkicda statikisa da fsevdorxevis sasazRvro-sakontaqto amocanebisTvis susti amonaxsnis arseboba da erTaderToba. moxerxda am amocanebisTvis sasrul el ementTa meTodis dafuzneba, kerZod, meTodis krebadohis damtkiceba [102].

drekadi hemitropul i sxoul ebisaTvis agebul ia da statikis SemTxvevasi gamokvl eul ia unil aterul i amocanis maTematikuri model i. damtkicebul ia susti amonaxsnis arseboba da erTaderToba [101,111].

gamokvl eul ia statikisa da mdgradi rxevis zogadi sakontaqto amocanebi ubnobriv erTgvarovani hemitropul i kompozituri sxedul isaTvis, rodesac sakontaqto zedapirebze (roml ebic nebismieri formis gl uv, Sekrul zedapirebs warmoadgenen) kmayofil deba meqanikuri vel ebis uwyvetobis piroba, xol o kompozitis sazRvarze mocemul ia dirixl es, neimanis an Sereul i sasazRvro pirobebi. damtkicebul ia am amocanebis amonaxsnebis arseboba da erTaderToba, dadgenil ia maTi amonaxsnebis sigl uve da asimptotika gansakuTrebul i wirebis midamoSi [101,111].

gamokvl eul ia statikisa da mdgradi rxevis zogadi sakontaqto amocanebi ubnobriv erTgvarovani hemitropul i kompozituri sxedul isaTvis im SemTxvevaSi, rodesac sakontaqto zedapirze bzaris tipis defeqtebia. bzaris Sesabamis zedapirze transmisiis pirobebi model irebul iqna siniorinis tipis ganzogadebul i tol obebiTa da utol obebiT [101,111].

Temis dasaxel eba: *"drekadobis Teoriis nawil obriv ucnobsazRvriani da sakontaqto amocanebi; fil traciis Teoriis sivrciTi RerZsimetriul i nawil obriv ucnobsazRvriani amocanebi da bl anti arakumSvadi siTxis brunviT warmoqmnil i reJimebi"*

koordinatori: revaz bancuri

ganxil ul ia drekadobis brtyel i Teoriis amocana xuTi ucnobi xvrel iT Sesustebul i kvadratisaTvis, romel Tagan oTxi xvrel idan TiToeul i kveTs kvadratis diagonal ebs da simetriul ia diagonal is mimarT, mexuTe xvrel i Seicavs kvadratis diagonal ebis gadakveTis wertil s da simetriul ia diagonal ebis da kvadratis mopirdapire gverdebis Suawertil ebis SemarTebel i monakveTebis mimarT. kvadratis gverdebze gadaadgil ebis normal uri mdgenel i mudmivia, mxebi Zabva nul is tol ia, xol o ucnob konturebze Zabvis normal uri mdgenel i mudmivia. moTxovnil ia, rom sazRvris ucnob nawil ebze tangencial uri normal uri Zabva iyos mudmivi. anal izur funqciaTa Teoriis aparatis gamoyenebiT amocanis amoxsna miyvanil ia riman-hil bertis amocanaze wrisaTvis, romel sac aqvs diametrze erTi Wril i. agebul ia amocanis zusti amonaxsni da daweril ia konturis gantol ebebi [95].

moZebnil ia Wavl uri Teoriis da fil traciis Teoriis nawil obriv ucnobsazRvriani sivrciTi RerZsimetriul i amocanebis stacionarul i amonaxsnebis agebis zogadi meTodi. Wavl ur TeoriaSi ganxil eba siTxis nakadi, romel ic nawil obriv SemosazRvrul ia myari siTxeSeuRwevadi kedl ebiT da ucnobi Tavisufal i zedapirebiT, roml ebzedac damatebiT mocemul ia mudmivi wneva. amoxsnil ia fil traciis Teoriis sivrciTi RerZsimetriul i nawil obriv ucnobsazRvriani ori amocana: erTi amocana, rodesac gruntis wyl ebi moedineba wyal sacavisaken da meore amocana, rodesac gaedineba wyal sacavidan, wyal sacavs kveTaSi aqvs trapeceidal uri forma. am amocanebis amonaxsnebis moZebnisas gamoyenebul ia anal izuri da ganzogadebul i anal izuri funqciebi, wrfivi da arawrfivi Cveul ebrivi diferencial uri gantol ebebi, kerZowarmoebul iani diferencial uri gantol ebebi, fredhol mis II gvaris integral uri gantol ebebi [87,88,170].

ganxil ul ia drekadobis Teoriis sakontaqto amocanebi drekadi sxedul ebisa da cvl adi sixistis mqone drekadi el ementebis urTierTqmedebis Sesaxeb [83]. kerZod, Seswavl il ia uban-uban erTgvarovani firfitisa da cvl adi sixistis mqone drekadi CarTvis urTierTqmedeba, rodesac araerTgvarovnebis gamyof sazRvarTan CarTva adgens marT kuTxes, kveTs am sazRvars an gadis am sazRvarze. anal izur funqciaTa Teoriis damxmare

amocanebis amoxsnis Sedegad dasmul i sakontaqto amocanebi miiyvanebian integro-diferencial ur gantol ebaTa sistemaze ucnobi sakontaqto Zabvebis mimarT. miRebul ia cxadi amoxsnebi dasmul i amocanis sxvadasxva konkretul i pirobebisaTis (CarTvis sixistis wrfivi kanoniT cvl il eba, CarTvis mier araerTgvarovnebis gamyofi sazRvris gadakveTa an am sazRvaze gasvl a, sasrul i an usasrul o CarTvis ganxil va da sxv.). miRebul i amoxsnebis Seswavl is safuZvel ze gamokvl eul ia sakontaqto Zabvebis yofaqceva singularul wertil ebSi [84].

cnobil i naSromebisgan gansxvavebiT, nebsmieri sigrZis orTotropul i cil indrul i garsebisaTvis agebul ia mdgradobis gantol ebaTa sistema da Sesabamisi gantol eba amonaxsnebis misaRebad. am gantol ebis safuZvel ze orTotropul i garsebisaTvis miRebul ia rogorc cnobil i, ise axal i Sedegebi [69]. cil indrul Tan miaxl oebul i orTotropul i brunviti garsebisaTvis miRebul ia mdgradobis dazustebul i gantol eba. miRebul i gantol eba cnobil isgan gansxvavdeba damatebiTi wevrit, romel sac aqvs igive rigi, rogorc gantol ebis sxva wevrebs. Aam gantol ebis safuZvel ze, rogorc saSual o sigrZis, ise grZel i garsebisaTvis ganxil ul ia praqtikul ad mniSvnel ovani rigi amocanebisa. miRebul ia kritikul i datvirTvebis da dinamikuri aramdgradobis areebis sazRvrebis gamosaTvl el i formul ebi. ganxil ul ia rogorc dadebiTi, ise uaryofiti gausis simrudis mqone garsebi [68,152].

Seswavl il ia or mbrunav forovan cil indrs Soris siTxis dinebis mdgradobis amocana, rodesac siTxis dinebaze moqmedebs wnevis gradienti transversal uri mimarTul ebiT. gamoyenebul ia amplitudur gantol ebaTa arawrfivi dinamiuri sistema, dadgenil ia wonasworobebi da martivi bifurkaciebi [82], Seswavl il ia zRvrul i cikl ebi da maTi TandaTanobiTi bifurkaciebis Sedegad warmoqmnil i qaosuri, rTul i reJimebi [167, Tez. 54].

algebra da topologia

Temis dasaxel eba: *"homotopiuri da kategoriul i algebris zogierTi sakiTxi"*

koordinatori: *xvedri inasariZe*

algebrul i da topologiuri KK-Teoriebis speqtrebze dayrdnobiT agebul ia kasparovis aragraduirebul i KK-Teoriis speqtri. Seswavl il ia KK-TeoriaSi fundamental uri mniSvnel obis mqone e.w. kasparovis namravl i am speqtrebis "smash" namravl is enaze. es sakiTxi aris qvakuTxedi momaval i statiisa, roml isTvisac mimdinareobs damatebiTi mosamzadebel i samuSao. damatebiTi gamokvl eva exeba mis gamoyenebebs [123].

gagrZel da gl uvi K-funqtorebis kvl eva l okal urad amozneqil i namdvil i (an kompl eqsuri) algebrebis kategoriaSi. nacvenebia, rom kompl eqsuri freSe-maikel is algebrebisaTvis gl uvi K-Teoria izomorful ia fil ipsis K-Teoriis. Ggarda amisa, moZebnil ia bunebrivi pirobebi, rodesac mocemul i l okal urad amozneqil i algebrisaTvis algebrul i K-j gufebi izomorful ia gl uvi KK-j gufebis [123].

gagrZel da cikl uri warmoebul i funqtorebis Seswavl a. Seswavl il ia asociuri algebrebis j varedini modul ebis hoxsil disa da cikl uri homologiები da dadgenil ia maTi kavSiri j varedini modul ebis cikl ur CCGG-homologiებTan [124].

dadgenil ia garkveul i tipis zogadi kategoriis saxe; masSi ganmartebu-
l ia ideal isa da komutatoris cnebebi da Seswavl il ia maTi Tvisebebi.
miRebul ia konstruqcia, romel ic warmoadgens uitis cnobil i konstruqci-
is anal ogs. kl asikur SemTxvevaSi es konstruqcia gansazRvravs funqtors
j gufabis kategoriidan l is al gebrebis kategoriSi. aq ganmartebul i kate-
goriis SemTxvevaSi aRniSnul i konstruqcia iZl eva funqtors am kategori-
dan garkveul "al gebrul " kategoriSi. SeuRl ebul i funqtorebis termineb-
Si Semotanil ia Tavisufal i obieqtis cnebebi zemoT aRniSnul kategori-
Si. Seiswavl eba am funqtoris damokidebul eba Tavisufal obieqtebTan [7].

Seswavl il ia me-2 rigis nil potenturi j gufabis homol ogiebi da amis
saSual ebiT dadgenil ia Magnas-Wittis izomorfizmi me-4 ganzomil ebamde [109].

Temis dasaxel eba: "intuicionisturi l ogikisa da modal uri sistemebis semantikuri anal izi"

koordinatori: l eo esakia

wrfiv haitingis al gebrebis garkveul kl asebsi meore rigis intuicio-
nisturi l ogikis interpretacia, agebul i 2006 wel s, ganzogadda nebismer-
ad maRal i rigis intuicionistur l ogikaze [Tez. 53].

miRebul ia Semdgomi Sedegebi maRal i rigis cil indrul i haitingis al -
gebrebs agebis mimarTul ebiT. dasrul ebul ia maRal i rigis cil indrul i
al gebridan el ementarul i toposis agebis cxadi konstruqcia [Tez. 33].

aRweril ia al eqsandrovic sivrceebTan axl os mdgar topol ogiur sivr-
ceTa axal i kl asi, roml istvisac kantor-bendiqsonis warmoebul is opera-
tori iZl eva intuicionisturi modal uri l ogikis garkveul i sistemis in-
terpretacias [125, Tez. 32].

damtkicebul ia, rom K4.Grz sistema srul ia: (a) sasrul i xisebri freime-
bis kl asis mimarT; (b) sustad dal agebul i sasrul i freimebis mimarT da
(g) memkvidreobiT dauSl adi topol ogiuri sivrceebis kl asis mimarT. amri-
gad, miviReT, rom K4.Grz sistema srul ia (kripkes azriT da topol ogiuri
azriT), gaaCnia sasrul i (xisebri) model ebi Tviseba, amoxsnadia da misi
amoxsnadoba aris PSPACE sirTul is kl asSi [9].

gamokvl eul ia sol ovais modal uri sistemis topol ogiuri model ebi.
dadgenil ia, rom Zl ierad bmul i sol ovais sivrce yovel Tvis al eqsandro-
vis sivrcea [Tez. 27].

Temis dasaxel eba: "topol ogiur sivrceTa al gebrul i model ebi da maTi gamoyenebani"

koordinatori: Tornike qadeiSvil i

Seswavl il ia mesame winaaRmdegobebi seris fibraciebSi; winaaRmdegobis
koj aWvebis terminebSi dadgenil ia fibraciis oTxganzomil ebian skel eton-
ze kveTis arsebobis kriteriumi [96].

Seswavl il ia mgrexi koj aWvebi homotopiur gerstenhaberis al gebrebSi.
maTi saSual ebiT moxerxda ori kl asikuri Teoriis – gerstenhaberis al geb-
rebis deformaciaTa Teoriisa da staSefis homotopiuri al gebrebis Teori-
is erT konteqstSi moqceva [129].

racional ur kohomol ogiebSi arsebul i A(8)-al gebris terminebSi age-
bul ia srul i racional uri homotopiuri invarianti, roml eic srul ad aR-
wers racional ur homotopiur tips [130].

gamoTvl il ia Tavisufal maryuJTa sivrcis kohomol ogiebi, roca sabaziso sivrcis kohomol ogiebi pol inomuri al gebraa mTel i ricxvebis mimarT [165].

abel uri kategoriisaTvis agebul ia misi warmoebul i kategoria homologiuri mul tikompl eqsebis saSual ebiT [166].

gamoTvl il ia modul arul i j gufebis moravas K-Teoria Cernis kl asebis terminebSi [94].

naCvenebia, rom zaifertis mraval nairoba aris maryuJTa hol omorful i oj axis gaertianeba [51]. Seswavl il ia riman-hil bertis amocana maryuJTa sivrceebSi [49] da agebul ia misi amonaxsnebi hol omorful i wirebis terminebSi [50].

marTvadobis cneba, rac ZiriTadi cnebaa marTvis da sistemebis TeoriaSi, aRweril iqna sistemis traektoriebis enaze [153].

gansazRvrul i da gamokvl eul i iqna ganzogadebul i avtoregresul i model is yofaqceva [154].

al baTobis Teoria da maTematikuri statistika

Temis dasaxel eba: *"marTvis Teoriisa da statistikis martingal uri metodebis gamoyeneba finansur anal izSi"*

koordinatori: *Teimuraz toronj aZe*

ganxil ul ia baiesuri martingal uri midgoma darRvevis zogad amocanaSi. darRveva gagebul ia rogorc ori al baTuri zomis bifurkacia. darRvevis amocanasTan dakavSirebul i fasis procesisTvis gamoyvanil ia arekili i Seqceul i stoqasturi diferencial uri gantol eba da naCvenebia, rom vinerisa da puasonis kl asikur SemTxvevebSi es gantol eba eqval enturia Tavisufal sazRvriani probl emisa parabol uri da sasrul -sxvaobiani diferencial uri operatorebisTvis Sesabamisad [37].

ganxil ul ia saSual o kvadratul i azriT hej irebis probl ema nawil obrivi informaciis pirobebSi. aqtivis fasis procesi uwyveti semimartingალია, xol o strategia aigeba bazarze arsebul i informaciis nawil iT. naCvenebia, rom es probl ema eqval enturia axal i saSual o kvadratul i azriT hej irebis axal i probl emisa damatebiTi makoreqtirebel i wevriT, sadac mxol od dakvirvebadi procesebi iReben monawil eobas. naCvenebia, rom am axal i probl emis fasis procesi aris kvadratul i samwevri, romel ic akmayofil ebs Seqceul diferencial ur gantol ebas da kapital is procesi, romel ic Seesabameba optimal ur mahej irebel strategias, xasiaTdeba wrfivi pirdapiri gantol ebis amonaxseniT [156,157].

ganxil eba sargebl ianobis funqciis maqsimizaciis probl ema zogadi sargebl ianobis funqciisaTvis. gamoyenebul ia dinamiuri programirebis midgoma. arasrul i finansuri bazris model Si aqtivebis fasis procesi aRiwereba mraval ganzomil ebiani uwyveti semimartingალია. garkveul regul arobis pirobebSi gamoyvanil ia kerZowarmoebul iani stoqasturi diferencial uri gantol eba, romel ic optimizaciis pirvel probl emasTan uSual od aris dakavSirebul i da naCvenebia, rom Sesabamisi kapital is procesi akmayofil ebs garkveul pirdapir stoqastur diferencial ur gantol ebas. magal iTebis saxiT mocemul ia xarisxovani, eqsponencial uri da logaritmul i sargebl ianobis funqciebi [155].

pirobiT damoukidebel dakvirvebaTa safuZvel ze agebul i simkvrivis gul ovani parametrul i SefasebisaTvis miRebul ia saSual o integral uri kvadratul i cdomil ebis asimptoturi warmodgena [169].

mraVal ganzomil ebiani stoqasturad aragl uvi vineris funqcional ebisatvis dadgenil ia martingal uri warmodgenis TeoremaSi monawil e stoqasturi integral is cxadi saxe. mocemul ia erTi meTodi, romel ic saSual ebas iZl eva cxadi saxiT avagoT puasonis funqcional ebis integral ur warmodgenaSi monawil e stoqasturi integral is integrandi da moyvanil ia am funqcional ebis stoqasturi warmoebul is Wvretadi proeqciebis gamosaTvl el i formul ebi. Semotanil ia pirvel i rigis stoqasturi warmoebul is mqone p ($1 \leq p \leq 2$) rigiT integrebadi puasonis funqcional ebis sobol evis tipis sivrce $D_{p,1,a}^{CP}$ da misi el ementebisaTvis ganzogadebul ia okone-hausman-kl arkis formul a, roca $1 < p < 2$ [81,163,164].

ganixil eba sadazRvevo kompaniis garkveul i periodis j amuri zaral is ganawil ebis gamoTvl is sakiTxi. panjeris cnobil i naSromidan gamomdinareobs Sedgenil ganawil ebaTa gamoTvl is SesaZl ebl oba, roca zaral ebis raodenoba aris puasonis, binomuri an uaryofiTi binomuri ganawil ebis mqone. al baTobis generaciis funqciaze dayrdnobiT SemoTavazebul ia Sedgenil ganawil ebaTa gamoTvl is zogadi meTodi, romel ic Sedgenil ganawil ebaTa gamoTvl is saSual ebas iZl eva zaral ebis raodenobis ufro zogadi ganawil ebaTa kl asebisaTvis [108].

atombirTvisa da el ementarul i nawil akebis fizika; vel is kvanturi Teoria

Temis dasaxel eba: "kvanturi vel ebis Teoriisa da mis gamoyenebasTan dakavSirebul i maTematikuri amocanebis kvl eva"

koordinatori: merab el iaSvil i

sazRvriani I iuvil is TeoriisTvis ganvitarebul i iqna operatorul i midgoma. SemoTavazebul ia axal i meTodi, romel ic saSual ebas gvaZl evs gamoviTval oT diskretul i speqtri da arekvl is ampl ituda verteqsul i operatoris saSual ebiT. meTodis sail ustraci od gamoyenebul ia nawil akis model i morsis potencial Si. naCvenebia, rom aRniSnul i meTodiT miRebul i Sedegebi srul TanxvdenaSia Sredingeris suraTSi meRebul gamoTvl ebTan. Semdeg, axal i meTodi gamoyenebul i iqna sazRvriani I iuvil is TeoriisTvis da gamoTvl il i iqna diskretul i speqtri, arekvl is ampl ituda da korel aciuri funqciebi. es gamoTvl ebi anzogadebs sxva meTodikiT miRebul cnobil Sedegebs da iZl eva am Sedegebis gansxvavebul i interpretaciis saSual ebas [17,110].

marTvis geometriul i meTodebis gamoyenebiT miRebul iqna kvanturi gamoTvl ebisatvis saWiro el ementarul i unitarul i gardaqmnebi optimizaciis pirobemis gaTval iswinebiT. probl ema Camoyal ibebul ia rogorc sasazRvro amocana, xol o el ementarul i gardaqmnebi miRebul ia rogorc Sesabamisi variaciul i gantol ebis amonaxsnebi [29,30].

aRweril ia $C^*(M,F)$ al gebra M mraVal saxeobazePpuasonis fol iacii-satvis. dadgenil ia kavSiri sawyis puasonis al gebrasa da $C^*(M,F)$ al gebras Soris [31].

damuSavebul ia hol is orSriani sistemis ganivi gamtarebl obis aRmweri mikroskopul i Teoria, romel ic hol is sistemebis arakomutaciur Tvissebs

efuZneba. haizenbergisa da uwyvetobis gantol ebaTa gaTval iswinebiT gamoyvanil ia fazuri denis anal izuri gamosaxul eba, romel ic adekvaturad aRwers SreTaSorisi koherentobas da karg TanxmobaSia eqsperimentul monacemebTan [27].

Seswavl il ia hol is orSriani sistemebis gaswrvivi gamtarebl obis anomal uri Tvissebebi. ganxil ul ia midgoma, romel ic eyrdnoba SreTaSorisi sol itonuri meseris arsebobis hipoTezas. miRebul i Teoriul i Sedegebi karg TanxmobaSia eqsperimentul monacemebTan, rac adasturebs sol itonuri meseris arsebobis varauds [25,26].

aRweril ia hol is kvanturi siTxis arakomutaciuri hidrodinamikul i model i [20].

Seswavl il ia $SU(2)$ yal iburi vel is kl asikuri konfiguraciebis kvanturi yofaqceva evkl iduri 3-ganzomil ebiani sivrcis moZraobaTa (transl aciebi, brunvebi) jgufis mimarT simetriebis Tval sazrisiT. gamoTvl il ia energetikul i doneebi da miRebul ia kvanturi agznebebis speqtri, romel ic brunvis mimarT simetriiT aris gampirobebul i [78].

gamoyvanil ia vil sonis renormal izaciuri jgufis gantol eba birTvuli denebis operatorebisaTvis. Seswavl il ia es gantol eba. Seswavl il ia lorenc-invariantobis efeqtebis gavlena nuklonis formaze, romel sacmanamade literaturasi ar iTval iswinebdnen. Sedegad damtkicda, rom nuklonis sferul oba darRveul ia. Agamoyvanil i da Seswavl il ia partonebis ganzogadoebul i ganawil ebis funqciebi dinamiuri gatol ebebis model ebSi [10,70,100].

dirakis bmebiani sistemebis formal izmis fargl ebSi gamoyenebul ia grebneris bazisis teqnike dafuZnebul i komutaciuri algebris algoritmuli metodi. gansazRvrul ia special uri erTgvarovani bazisi, romel ic mniSvel ovnad amcirebs kompiuterul i gamoTvl ebis mocul obas. warmodge nil i algoritmebi real izebul ia kompiuterul i algebris "Mathematica" da "Maple" sistemebSi. Semotavazebul i sqema gamoyenebul ia e.w. sinaTl is konusis iang-mil sis meqanikaSi [28,119,137].

Seswavl il ia kl asikuri amoxnebi iang-mil sis da dilatonuri vel ebis urTierTqmedebad TeoriaSi evkl idur sivrcedroSi. ganxil ul ia rogorc umaso dilaton [12] aseve masiuri SemTxveva [13]. Cveni analizuri da ricxviti Sedegebi migvitiTeben, rom arsebobs dionuri tipis amoxsnebis Stoebis usasrulo raodenoba, roml ebic xasiaTdeba mTel i ricxvityal iburi vel is amplitudis nul ebis raodenobiT. napovn amoxsnebs gaaCniat sasruli evkl iduri qmedeba da isini warmoadgenen axal unagiris wertil ebs evkl idur funqcionalur integral Si.

2. samecniero grantebi

a) erovnul i grantebi

2007 wels institutSi muSavdeboda saqarTvel os erovnul i samecniero fondis 2006 wl is sagranto konkursSi gamarjvebul i 9 proeqti:

1) proeqti # GNSF/ST06/3-001: "sasazRvro da sakontaqto amocanebi drekadobis Teoriis ganzogadoebul i model ebisaTvis" _ xel mZRvanel i: r. duduCava; Ziritadi personal i: d. natroSvili, o. Wkadia, l. giorgaSvili, T. buCukuri, r. gaCeCil aZe, d. kapanaZe, a. gaCeCil aZe;

2) proeqti # GNSF/ST06/3-002: "sasazRvro amocanebi usasrulo Sual edSi araavtonomiuri Cveul ebrivi diferencial uri

gantol ebebisaTvis" _ xel mZRvanel i: i. kiRuraZe; ZiriTadi personal i: m. aSordia, s. muxigul aSvil i, z. soxaZe, n. farcvania;

3) proeqti # GNSF/ST06/3-003: "intuicionisturi modal uri l ogikis semantika: al gebrul i da topol ogiuri model ebi" _ xel mZRvanel i: l . esakia; ZiriTadi personal i: d. pataraia, m. j ibl aZe, n. beJaniSvil i, d. gabel aia, g. beJaniSvil i;

4) proeqti # GNSF/ST06/3-004: "al gebrul i da topol ogiuri struqturabi homotopiur da kategoriul al gebraSi, K-TeoriaSi da cikl ur homol o-giaSi" _ xel mZRvanel i: x. inasariZe; ZiriTadi personal i: m. bakuraZe, T. da-TuaSvil i, d. zanguraSvil i, n. inasariZe, T. kandel aki, b. mesabl iSvil i, z. omiaZe, a. paWkoria, z. j anel iZe, e. xmal aZe; damxmare personal i: g. raqvia-Svil i, S. mel aZe, d. Cixl aZe, T. j anel iZe;

5) proeqti # GNSF/ST06/3-005: "maxasiaTebel i amocanebi arawrfiv hiperbol ur gantol ebaTa zogierTi kl asisaTvis" _ xel mZRvanel i: j . gvazava; ZiriTadi personal i: s. xaribegaSvil i, g. berikel aSvil i, o. j oxaZe, a. gagnize, b. midodaSvil i;

6) proeqti # GNSF/ST06/3-006: "uwyvet tanTa meqanikis zogierTi maTematikuri probl ema" _ xel mZRvanel i: r. bancuri; ZiriTadi personal i: a. cicqiSvil i, s. kukuj anovi, n. Savl ayaZe, l . SafaqiZe, g. kapanaZe, n. odiSel iZe;

7) proeqti # GNSF/ST06/3-007: "topol ogiur sivrceTa da fibraciaTa axal i al gebrul i model ebi da maTi gamoyeneba homotopiis TeoriaSi" _ xel mZRvanel i: T. qadeiSvil i; ZiriTadi personal i: n. berikaSvil i, s. sanebliZe, s. xaJomia;

8) proeqti # GNSF/ST06/3-010: "arastandardtul i funqciuri sivrceebi da funqciebi da maTi gamoyeneba kerZowarmoebul ebian diferencial ur gantol ebaTa TeoriaSi" _ xel mZRvanel i: v. kokil aSvil i; ZiriTadi personal i: a. xaraziSvil i, v. paataSvil i, g. xuskivaZe, a. mesxi, e. gordaZe, S. tetunaSvil i, a. kirTaZe, c. canava;

9) proeqti # GNSF/ST06/4-050: "ZiriTadi mdgomareobis probl ema vel is kvantur Teoriasa da kvantur statistikaSi" _ xel mZRvanel i: m. el iaSvil i; ZiriTadi personal i: g. j orj aZe, a. kvinixiZe, a. xvedel iZe, g. ciciSvil i, a. SurRaia, g. WavWaniZe, b. maRraZe, z. giunaSvil i, g. l avrel aSvil i.

2007 wel s dasrul da muSaoba or proeqtze (proeqti # GNSF/ST06/3-001; proeqti # GNSF/ST06/3-006). danarCen 7 proeqtze muSaobis gagrZel eba gaTval iswinebul ia 2008 wl istvis.

b) sazRvargareTul i grantebi

INTAS Grant No. 03-51-3251: "*Simplicial algebra, homology theories, K-theory and homotopy theory*" (x. inasariZe _ xel mZRvanel i; m. bakuraZe, n. inasariZe, T. kandel aki, e. xmal aZe);

INTAS Grant No. 03-51-5007: "*Nonlinear evolution equations. Blow-up phenomena. Stability and instability*" (i. kiRuraZe _ xel mZRvanel i; j . gvazava, s. xaribegaSvil i, n. farcvania);

INTAS Grant No. 04-77-7080: "*Algebraic and deduction methods in non-classical logics*" (l . esakia _ xel mZRvanel i; m. j ibl aZe, d. pataraia, d. gabel aia);

INTAS Grant No. 05-100008-7805: "*Singularities, bifurcations and monodromy*" (g. ximSi aSvil i);

INTAS Grant No. 05-1000008-7921: "Investigation of global catastrophes for nonlinear processes in continuum methods" (j . gvazava _ xel mZRvanel i ; o. j oxaZe);

INTAS Grant No. 05-1000008-8157: "Function spaces and their applications to partial differential equations" (v. kokil aSvil i _ xel mZRvanel i ; a. mesxi, v. paataSvil i, S. tetunaSvil i);

INTAS Grant No. 06-1000017-8609: "K-theory, non-commutative geometry, homology theories, homotopy theory, operator and normed algebras" (x. inasarize _ xel mZRvanel i);

INTAS Grant No. 06-1000017-8792: "Variable exponent analysis" (v. kokil aSvil i _ xel mZRvanel i ; l . efremize, a. mesxi, v. paataSvil i, S. tetunaSvil i);

INTAS Grant No. 06-1000017-9093: "Polynomial mappings: algebra, computation and topology" (g. ximSi aSvil i _ xel mZRvanel i);

INTAS Grant No. 06-1000017-9258: "Testing spacetime symmetry-breaking in the early universe with the Cosmic Microwave Background and with sources of high frequency radiation" (g. l avrel aSvil i _ xel mZRvanel i);

GRDF/CRDF Grant No. GEP1-3339-TB-06: "Non-classical problems of fluid-elastic cusped plate (beam) interaction" (s. xaribegaSvil i);

UK Grant No. 2005/R4-JP of The Royal Society - ingl isis samefo sazogadoebis granti (o. Wkadua);

German Grant No. DO 447-3/3, 447/4-1: "D-Bran dynamic problems and correspondence between field theory and string theory" (g. j orj aZe);

Grant of FCT SFRH/BPD/20524/2004 - portugal iis samecniero fondis granti (d. kapanaZe);

Grant of EPSRC EP/C014014/1, 2006- 2008 (didi britneTi; n. beJaniSvil i).

3. 2007 wel s Catarebul i samecniero konferenciebi, Sexvedrebi

al gebris ganyofil ebam mecnierebisa da teqnologiis erovnul centr-Tan erTad Caatara saerTaSoriso konferencia "Homology Theories, K-theory and Homotopy Theory" (Tbil isi, 28 maisi-2ivnisi, 2007 wel i).

al baTobis Teoriisa da maTematikuri statistikis ganyofil ebam 2007 wl is 18 Teberval s gamarTa prof. r. CitaSvil is xsovnisadmi miZRvnili samecniero sesia.

4. 2007 wl is sagamomceml o saqmi anoba

2007 wel s gamovi da:

"saqarTvel os maTematikuri Jurnal is" me-14 tomis oTximeri;

Jurnal is "memuarebi diferencial ur gantol ebebsa da maTematikur fizikaSi" sami tomi: me-40, 41-e da 42-e;

Jurnal is "a. razmaZis maTematikis institutis Sromebi" sami tomi: 143-e, 144-e da 145-e.

5. 2007 weli s gamoqveynebul i da gamosaqveynebl ad gadacemul i Sromebi (ix. danarTi 1)

6. 2007 weli s samecniero forumbze wakiTxul i moxsenebebi da moxsenebaTa Tezisebi (ix. danarTi 2)

7. saerTaSoriso samecniero TanamSroml oba

mal xaz aSordia 2007 weli s 16-dan 22 seqtembramde miwl inebul i iyo CexetSi, sadac monawil eoba miRo saerTaSoriso vorkSopSi diferencial ur gantol ebebSi “Boundary Value Problems and Related Topics” (q. heinice), sadac gaakeTa mowveul i moxseneba Temaze: “On the solvability of BVPs for the nonlinear systems of generalized ODEs and for impulsive equations”.

mal xaz bakuraZe 2007 weli s 14 oqtombridan 27 dekembramde miwl inebul i iyo I ahoris universitetSi (pakistani) erTobl ivi kvl evebis Casatarebl ad.

revaz bancuri 2007 weli s 23-29 seqtembers miwl inebul i iyo q. caxkaZorSi (somxeTi) saerTaSoriso konferenciis muSaobaSi monawil eobis misaRebad.

nikol oz beJaniSvili 2007 weli s 19 Tebervidan 30 martamde, 16 april idan 21 seqtembramde da 15 oqtombridan 20 dekembramde miwl inebul i iyo I esteris universitetSi (inglisi) kompiuterul mecnierebaTa departamentSi “Coalgebras, Modal Logic, Stone Duality” proeqtze samuSaod.

davit gabel aia 2007 weli s 14-dan 23 Tebervil amde miwl inebul i iyo perujasa da milanSi (italia) samecniero konferencia-seminarebSi monawil eobis misaRebad. 1-dan 20 agvistomde miwl inebul i iyo oqsfordis universitetis winda anas kol ej Si (inglisi) saerTaSoriso konferenciaze “Algebraic and Topological Methods for Non-classical Logics III”.

vaxtang garsevaniSvili 2007 weli s 19 maisidan 12 ivl isamde miwl inebul i iyo evropis birTvul i kvl evebis centrSi q. JenevaSi (Sveicaria) erTobl ivi kvl evebis Casatarebl ad.

jondo gvazava 2007 weli s 28 maisidan 3 ivn isamde miwl inebul i iyo novosibirskis universitetSi, sadac monawil eoba miRo saerTaSoriso konferenciaSi “diferencial uri gantol ebebi, funqciaTa Teoria da gamoyenebebi” da gaakeTa moxseneba Temaze “On some singularities of solutions to the nonlinear characteristic problem with a free support of data”.

Tamar daTuaSvili 2007 weli s 1 seqtembridan 1 oqtombramde da 1-dan 12 noembramde miwl inebul i iyo santiago de kompostelas universitetSi (espaneTi), xolo 1 oqtombridan 1 noembramde – bigos universitetSi (pontevedra, espaneTi) espanel kol egebTan erTobl ivi samecniero samuSaoebis Casatarebl ad.

rol and duduCava 2007 weli s 1 ianvridan 10 martamde asrul ebda diferencial uri geometriis kaTedris gangis moval eobas saarbriukenis universitetSi (germania). 10 Tebervidan 5 martamde miwveul i iyo I isabonis teqnukur universitetSi (portugalia) prof. f. SpekTan da aveiros universitetSi (portugalia) prof. I. kastroTan erTobl ivi kvl evebis Casatarebl ad. r. duduCava 11-dan 15 martamde imyofeboda stambul is teqnukur univer-

sitetSi (Turqeti), sadac ganixil a samecniero TanamSroml obis sakiTxebi prof. a. taSdemirTan da prof. m. omurtagTan, waikiTxa moxseneba. 28 maisidan 3 ivnisamde miwl inebul i iyo novosibirskis universitetSi, sadac monawil eoba miRo akad. i. vekuas dabadebidan 100 wl isTavisadmi miZRvnil saerTaSoriso konferenciaSi "diferencial uri gantol ebebi, funqciaTa Teoria da gamoyenebebi" da gaakeTa pl enarul i moxseneba. 15-dan 29 seqtembramde miwl inebiT imyofeboda q. odesasa (ukraina) da q. simferopol Si (yirimi) odesis universitetSi kol egebtan Sesaxvedrad samecniero konsul taciebisatvis da yirimis saerTaSoriso skol a-simpoziumSi monawil eobis misaRebad.

al eqsandre el aSvil i 2007 wl is 7-dan 18 ivnisamde miwl inebul i iyo CexeTis teqnukur universitetSi konferenciaSi monawil eobis misaRebad. 22 ivnisidan 10 agvistomde miwl inebul i iyo bil efel dis universitetSi (germania) erTobl ivi kvl evebis Casatarebl ad. a. el aSvil i 12 oqtombridan 15 dekembramde miwl inebul i iyo boxumis universitetSi (germania) erTobl ivi kvl evebis Casatarebl ad.

merab el iaSvil i 2007 wl is 19-dan 27 agvistomde miwl inebul i iyo q. ericeSi (italia) "etore maioranas" samecniero centris seminaris muSaobaSi monawil eobis misaRebad.

I aSa efremize 2006 wl is 2 ivl isidan 2007 wl is 26 noembramde miwl inebul i iyo q. tokios universitetSi iaponiis mecnierebisadmi daxmarebis sazogadoebis (Japanese Society of Promotion of Sciences) grantis programiT. man Seasrul a erTobl ivi samecniero samuSaoebi iaponel special istebTan erTad, analizis cnobil special istTan fujistan erTad moamzada xuTi erTobl ivi samecniero statia. 2007 wl is ianvarSi I. efremize miwveviT imyofeboda merilendis (aSS) universitetSi, sadac man amerikel special istebTan erTad Seasrul a erTobl ivi samecniero samuSao, vineris centrSi gamovida moxsenebebiT.

nikol oz inasariZe 2007 wl is 7 Tebervl idan 2 martamde da 2 oqtombridan 5 noembramde miwl inebul i iyo santiago de kompostelas universitetSi (espaneti) erTobl ivi kvl evebis Casatarebl ad.

Tamaz kandel aki 2007 wl is 2 Tebervl idan 3 martamde miwl inebul i iyo santiago de kompostelas universitetSi (espaneti) samecniero TanamSroml obisatvis.

daviT kapanaZe xangrZl ivi miwl inebiT imyofeboda q. aveiros umaRl es teqnukur institutSi (portugalia) portugaliis samecniero fondis grantiT gatval iswinebul i samecniero kvl evebis Casatarebl ad. igi prof. I. kastrostan erTad ikvl evda el eqtromagnituri tal Rebis gavrcelebis amocanas impedansis tipis sasazRvro pirobebiT.

ivane kiRuraZe 2007 wl is 21 april idan 4 ivl isamde miwl inebul i iyo fl oridis teqnol ogiuri institutis matematikis departamentSi (q. melburni, fl orida, aSS), xolo 14 seqtembridan 31 oqtombramde _ masarikis universitetsa (q. brno, CexeTi) da fl orenciis universitetSi (q. fl orencia, italia). fl oridaSi yofnisas igi profesor r. agarvalTan erTad ikvl evda singul arul sasazRvro amocanebs maRal i rigis arawrfivi Cveul ebrivi diferencial uri gantol ebebisatvis. CexeTSi yofnisas man monawil eoba miRo saerTaSoriso vorkSopSi diferencial ur gantol ebebiSi "Boundary Value Problems and Related Topics" (q. heinice, 16-20 seqtemberi), sadac gaakeTa mowveuli moxseneba Temaze: "On the conditional stability of solutions of nonlinear differential systems". brnos universitetis magistrantebisa da doqtorantebisaTvis waikiTxa special uri kursi "sasazRvro amocanebi

Cveul ebriv diferencial ur gantol ebaTa arawrfivi sistemebisaTvis", xol o amave universitetis Cveul ebriv diferencial ur gantol ebaTa Tvisebrivi Teoriis seminarze waikiTxa moxseneba Temaze "On proper and blow-up solutions of two-dimensional Emden-Fowler type differential systems". fl orenciis universitetis Cveul ebrivi diferencial uri gantol ebebis seminarze i. kiRuraZem waikiTxa moxseneba Temaze: "On boundary value problems at resonance for high order nonlinear differential equations". Cex maTematikosTan z. doSl aSTan da ital iel maTematikosebTan m. marinisTan da m. CekisTan erTad Seasrul a erTobl ivi gamokvl eva "On nonnegative solutions of singular boundary value problems for Emden-Fowler-type differential systems". **i. kiRuraZe** TanamSroml obda ucxour samecniero Jurnal ebTan ("Boundary Value Problems"; "E. J. Qualitative Theory of Difference Equations"; "Differentsial'nye Uravneniya") rogorc saredaqcio kol egiis wevri da recenzi.

vaxtang kokil aSvil i 2007 wl is 31 ianvridan 15 Tebervl amde mivl inebul i iyo bal ikesiris (TurqeTi) universitetSi nato-TurqeTis grantis erTobl iv samecniero proeqtze samuSaod da l eqciebis wasakiTxad. 14-18 maiss mivl inebul i iyo q. baqoSi (azerbaijani) saerTaSoriso konferenciaSi monawil eobis misaRebad. 12-19 agvistos mivl ineblT imyofeboda q. ankaraSi (TurqeTi) me-6 ISAAC-is saerTaSoriso kongresis muSaobaSi monawil eobis misaRebad. v. kokil aSvil i 3-10 seqtembers mivl ineblT imyofeboda q. astanaSi, sadac moxseneblT gamovi da saerTaSoriso konferenciaze.

sergei kukuj anovi 2007 wl is 23-29 seqtembers mivl inebul i iyo q. caxkaZorSi (somxeTi) saerTaSoriso konferenciis muSaobaSi monawil eobis misaRebad.

al eqsandre kvinixiZe 2007 wl is 7 april idan 31 agvistomde mivl ineblT imyofeboda q. adel aidas fl indersis universitetSi (avstral ia) samecniero TanamSroml obisaTvis. 9 seqtembridan 30 oqtombramde mivl inebul i iyo iul ixSi (germania) samecniero centrSi erTobl ivi kvl evebis Casatarebl ad.

giorgi I avrel aSvil i 2007 wl is 15 ianvridan 26 martamde mivl inebul i iyo monsis universitetSi (bel gia) da gol mSi maqs pl ankis institutSi (germania) erTobl ivi kvl evebis Casatarebl ad. 16 ivnisidan 22 ivl isamde mivl inebul i iyo ICTP-Si _ Teoriul i fizikis saerTaSoriso centrSi (triesti, ital ia) erTobl ivi samecniero kvl evebis Casatarebl ad.

vaxtang I omaZe 2007 wl is 23 ianvridan 10 ivnisamde da 20 seqtembridan 25 dekembramde mivl inebul i iyo I ahoris (pakistani) saxel mwifo universitetSi l eqciebis kursis wasakiTxad.

mixeil mania 2007 wl is 10-17 ianvars mivl ineblT imyofeboda amsterdamSi (hol andia) saerTaSoriso konferenciaze "Conference on stochastic processes", sadac gaakeTa moxseneba "Hedging under restricted information".

baCuki mesabl iSvil i 2007 wl is 19 Tebervl idan 15 april amde mivl inebul i iyo diusel dorfis universitetSi (germania) erTobl ivi kvl evebis Casatarebl ad.

al eqsandre mesxi 2007 wl is 14-18 maiss mivl inebul i iyo q. baqoSi (azerbaijani) saerTaSoriso konferenciaSi monawil eobis misaRebad. 12-19 agvistos mivl ineblT imyofeboda q. ankaraSi (TurqeTi) me-6 ISAAC-is saerTaSoriso kongresis muSaobaSi monawil eobis misaRebad. 3-10 seqtembers mivl ineblT imyofeboda q. astanaSi, sadac moxseneblT gamovi da saerTaSoriso konferenciaze. a. mesxi 2007 wl is 12 Tebervl idan 15 maisamde da 19 seqtembridan 19 dekembramde mivl inebul i iyo I ahoris (pakistani) maTematikur

mecnierebaTa skol aSi l eqciebis wasakiTxad samagistro da sadoqtoro programebiT momzadebis centrSi.

sul xan muxigul aSvil i xangrZl ivi samecniero mivl inebiT imyofeboda CexeTis mecnierebaTa akademiis maTematikis institutSi, sadac Cex da ukrainel kol egebtan r. haki Tan, b. puJasTan da i. hricaisTan erTad ikvl evda sasazRvro amocanebs funqcional ur-diferencial uri gantol ebebis da sistemebisatvis. miRebul i Sedegebis Sesaxeb CexeTis mecnierebaTa akademiis maTematikis institutis brnos filial is samecniero seminarze gaakeTa moxseneba Temaze "wrfivi funqcional ur diferencial uri gantol ebebis sistemebisatvis periodul i amocanis amoxsnadobis optimal uri sakmarisi pirobebi". **s. muxigul aSvil i** TanamSroml obda ucxour samecniero Jurnal ebTan ("Boundary Value Problems"; "Nonlinear oscillations"; "Nonlinear analysis") rogorc recenzenti.

vaxtang paataSvil i 2007 wl is 12-19 agvistos mivl inebiT imyofeboda q. ankarasi (Turqeti) me-6 ISAAC-is saerTasoriso kongresis muSaobaSi monawil eobis misaRebad.

dimitri pataraia 2007 wl is 5-dan 23 Tebevli amde mivl inebul i iyo san antonioSi (aSS) da peruj asa da mil anSi (ital ia) samecniero konferencia-seminarebSi monawil eobis misaRebad. 4dan 20 agvistomde mivl inebul i iyo oqsfordis universitetis wmindan kol ej Si (ingl isi) saerTasoriso konferenciaze "Algebraic and Topological Methods for Non-classical Logics III".

Saqro tetunaSvil i 2007 wl is 14-18 maiss mivl inebul i iyo q. baqosi (azerbajani) saerTasoriso konferenciaSi monawil eobis misaRebad. 4-10 ivniss mivl inebiT imyofeboda q. astanasi, sadac moxsenebiT gamovida saerTasoriso konferenciaze "funqciata Teoria da gamotvliTi metodebi".

nino farcvania 2007 wl is 15-dan 24 martamde mivl inebul i iyo masarikis universitetSi (q. brno, Cexeti). CexeTSi yofnisas man moxsenebebi gaakeTa masarikis universitetis seminarze diferencial ur gantol ebebsi da CexeTis mecnierebaTa akademiis maTematikis institutis (q. praRa) seminarze diferencial ur gantol ebebsa da integrebis TeoriaSi. Cex maTematikosTan z. doSl asTan erTad Seasrula erTobl ivi gamokvl eva "On oscillation properties of second order nonlinear differential equations". n. farcvania 24-dan 30 ivnisamde mivl inebul i iyo segedis universitetis boliais institutSi (q. segedi, ungreTi), sadac monawil eoba miRo diferencial ur gantol ebaTa Tvisebriv TeoriaSi me-8 saerTasoriso kol oqviumSi da gaakeTa mowveul i moxseneba Temaze "On minimal and maximal solutions of singular BVPs", xolo 16-dan 24 seqtembramde mivl inebul i iyo CexeTSi, sadac monawil eoba miRo saerTasoriso vorkSopSi diferencial ur gantol ebebsi "Boundary Value Problems and Related Topics" (q. heinice) da gaakeTa mowveul i moxseneba Temaze: "On solvability and unsolvability of the problem on transitional solutions for second order nonlinear differential equations".

Tornike qadeiSvil i 2007 wl is 15-dan 22 ianvramde mivl inebul i iyo parizSi anri puankares institutSi (safrangeTi) saerTasoriso konferenciaSi monawil eobis misaRebad. 17-dan 24 ivnisamde mivl inebul i iyo stefan banaxis maTematikur centrSi (poloneTi) konferenciaSi monawil eobis misaRebad. T. qadeiSvil i 20 agvistodan 25 seqtembramde mivl inebul i iyo Crdil o karolinis universitetSi (aSS) erTobl ivi samecniero kvl ebebis Casatarebl ad.

nugzar Savi ayaZe 2007 wl is 23-29 seqtembers mivl inebul i iyo q. caxkazorSi (somxeti) saerTasoriso konferenciis muSaobaSi monawil eobis misaRebad.

giorgi ciciSvil i 2007 wl is 22 ianvridan 19 april amde mivl inebul i iyo ICTP-Si _ Teoriul i fizikis saerTaSoriso centrSi (triesti, italia) erToblivi samecniero kvl evebis Casatarebl ad. 2007 wl is 3 seqtembridan 2008 wl is 3 ivl isamde g. ciciSvil i mivl inebul ia tokios universitetSi (iaponia) samecniero TanamSroml obisaTvis.

oTar Wkadua 2007 wl is 15 ianvridan 17 Tebevli amde mivl inebul i iyo Londonis briunelis universitetSi (inglisi) inglis samefo sazoga doebis grantiT (UK Grant # 2005/R4-JP of The Royal Society) gaTval iswinebul i erToblivi kvl evebis Casatarebl ad prof. mixail ovTan erTad.

al eqsandre xaraziSvil i 2007 wl is 17-23 ivniss mivl inebul i iyo q. kievSi (ukraina) saerTaSoriso konferenciaze "skoroxodis sivrce 50 wl is Semdeg" pl enarul i moxsenebis gasakeTebli ad. 9-15 seqtembers mivl inebul i iyo q. bedl ovoSi (poloneTi) saerTaSoriso konferenciaSi monawil eobis misaRebad.

sergo xaribegaSvil i 2007 wl is 12 seqtembridan 12 oqtombramde mivl inebul i iyo del averis universitetis maTematikis departamentSi (aSS), sadac amerikel kolegebTan erTad ikvl evda aral ifSicuri sazRvris wamaxvilebuli prizmul i garsis maRali rigis ierarqiul maTematikur model s. s. **xaribegaSvil i** TanamSroml obda ucxour samecniero Jurnal ebTan ("E. J. Qualitative Theory of Difference Equations"; "J. Nonlinear Analysis: Theory, Methods & Applications") rogorc recenzenti.

giorgi ximSiaSvil i 2007 wl is 22 ianvridan 31 maisamde mivl inebul i iyo q. kvernavakaSi (meqsika) da q. saufbendSi (aSS) samecniero konferenciebSi monawil eobis misaRebad da l eqciebis kursis wasakiTxad. 11-dan 30 ivnissamde mivl inebul i iyo q. sankt-peterburgsa (ruseTi) da q. varSavaSi (poloneTi) samecniero konferenciebSi monawil eobis misaRebad. g. ximSiaSvil i 15 ivl isidan 15 seqtembramde mivl inebul i iyo ICTP-Si _ Teoriul i fizikis saerTaSoriso centrSi (triesti, italia) erToblivi samecniero kvl evebis Casatarebl ad. 22 oqtombridan 12 noembramde mivl inebul i iyo q. kievisa (ukraina) da q. sankt-peterburgis (ruseTi) universitetebSi erToblivi kvl evebis Casatarebl ad.

emzar xmal aZe 2007 wl is 2 Tebevli idan 3 martamde da 2 oqtombridan 5 noembramde mivl inebul i iyo santiago de kompostelas universitetSi (espaneTi) erToblivi kvl evebis Casatarebl ad.

arsen xvedel iZe xangrZlivi mivl inebiT (2008 wl is 30 april amde) imyofeba q. dubnaSi (ruseTi) gaerTianebul i birTvuli kvl evis institutSi erToblivi samecniero kvl evebis Casatarebl ad.

mamuka jibli aZe 2007 wl is 14-dan 23 Tebevli amde mivl inebul i iyo perujasa da milanSi (italia) samecniero konferencia-seminarebSi monawil eobis misaRebad. 4dan 20 agvistomde mivl inebul i iyo oqsfordis universitetis winda anas kolejSi (inglisi) saerTaSoriso konferenciaze "Algebraic and Topological Methods for Non-classical Logics III".

giorgi jorjaZe 2007 wl is 19 Tebevli idan 25 ivl isamde da 12 oqtombridan 25 dekembramde mivl inebul i iyo humboldtis universitetSi (germania) erToblivi kvl eviTi samuSaoebis Casatarebl ad.

2007 wl is 5 agvistodan 5 seqtembramde institutSi samecniero mivl inebiT imyofboda masarikis universitetis (q. brno, cexeti) docenti **bedrJixpuJa**, romel mac i. kiruraZesTan da n. farcvaniasTan erTad Seasrul a erToblivi gamokvl eva "On periodic solutions of higher order functional differential equations".

2007 wli is oqtomberSi institutis maTematikuri anal izis ganyofil ebaSi stumrad imyofeboda anal izis cnobil i special isti, al garves universitetis (portugal ia) profesori **s. samko**. man v. kokil aSvil Tan erTad Seasrul a erTobl ivi samecniero samuSao, ganyofil ebis mudmivmoqmed seminarze gamovida moxsenebiT Temaze "ganzogadoebul i potencial ebi cvl admaCveneblian l ebegis sivrceebSi".

institutis al baTobis Teoriisa da maTematikuri statistikis ganyofil ebaSi stumrad imyofebodnen: vel ingtonis universitetis (axal i zel andia) profesori **estate xmal aZe** (1 ivlisi _ 30 noemberi); romis universitetis (ital ia) profesori **enco orsingeri** (10-20 ivnisi); turinis universitetis (ital ia) doqtori **marina santakroCe** (20 noemberi _ 5 dekemberi). zemoaRniSnul ma kol egebma gaakeTes araerTi samecniero moxseneba ganyofil ebis sxdomebze.

8. institutis sxva samecniero da samecniero-saorganizacio saqmi anoba

institutSi muSaobda 9 samecniero seminari.

saangariSo periodSi institutis bibl ioTeka Seivso 382 beWdviTi erTeul iT (372 Jurnal i da 10 wigni). 2007 wli is 31 dekembrisaTvis institutis bibl ioTekis fondSi aris 99014 beWdviTi erTeul i.

institutma (institutis ufrosma mecniere-TanamSromel ma, fizika-maTematikis mecnierebaTa kandidatma Tengiz ServaSiZem) monawil eoba miIRO andria razmaZis piradi arqivis aRweril obis SedgenaSi ("*maTematikur mecnierebaTa doqtoris, profesor andria mixeil is Ze razmaZis piradi arqivis aRweril oba*", saqarTvel os uaxl esi istoriis central uri saxel mwifo arqivi, fondi 768, Tbil isi, 2007 w.; arqivi Sekriba, daaxarisxa da aRwera ioseb Sal vas Ze cincaZem). aRweril obis asl i inaxeba andria razmaZis maTematikis institutis bibl ioTekaSi.

institutis direktoris moval eobis Semsrul ebel i,
fizika-maTematikis mecnierebaTa kandidati

nino farcvania

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