Modal logic of products of neighborhood frames

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Leo Esakia studied topological semantics of modal logic. One possibility is to consider closure operator as modal diamond and the other is to consider derived set operator as modal diamond. Both these semantics are particular cases of neighbourhood frame semantics. We generalise the product of topological spaces presented by J. van Benthem, G. Bezhanishvili, B. ten Cate, D. Sarenac to neighbourhood frames.

In 2012 we proved that for any pair L and L' of logics from the set {**S4**, **D4**, **D**, **T**}, the modal logic of products of L-neighborhood frames and L'-neighborhood frames is the fusion of L and L'.

In this talk we cover the case of the logic **K**. We find the logic of products of **K**-neighborhood frames and show that it does not coincide with the fusion **K∗K**.