Modal and Coalgebraic Lindstroem Theorems

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In this talk we consider analogs of Lindstroem's Theorem for modal logic. The main question that we will address is the following open problem:

> Let L be an extension of basic modal logic (BML) that is bisimulation
> invariant and compact. Is L equivalent to BML?

Earlier results by de Rijke, van Benthem and Otto & Piro suggested positive answers to the above question, but these results all require the extension L to have some additional properties. In joint work with Kurz we showed that in general the answer to the above question is negative, but the counterexample that we provided is not completely satisfactory.

We will approach the problem from a general, coalgebraic perspective, which involves some topological reasoning about the final coalgebra and its approximations in the terminal sequence.