



Speaker: Sean Walsh

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Tuesday, March 1, 2016

2:00 PM

125 Hayes-Healy Hall

Title: Realizability Semantics for Quantified Modal Logic: Generalizing Flagg's 1985 Construction

Abstract:

A semantics for quantified modal logic is presented that is based on Kleene's notion of realizability. This semantics generalizes Flagg's 1985 construction of a model of a modal version of Church's Thesis and first-order arithmetic. While the bulk of the paper is devoted to developing the details of the semantics, to illustrate the scope of this approach, we show that the construction produces (i) a model of a modal version of Church's Thesis and a variant of a modal set theory due to Goodman and Scedrov, (ii) a model of a modal version of Troelstra's generalized continuity principle together with a fragment of second-order arithmetic, and (iii) a model based on Scott's graph model (for the untyped lambda calculus) which witnesses the failure of the stability of non-identity. For the paper on which the talk is based, see: <http://arxiv.org/abs/1510.01977> (Joint work with Benjamin G. Rin)