A magic-tree theorem and its converse

Yared Nigussie
Columbia University, New York
yn2249@columbia.edu

Abstract

There is a magic-tree theorem which asserts the following: consider sets of finite rooted trees that are closed downward by the topological embedding relation "$\preceq_F$", (called ideals, for short, satisfying a condition known as the Friedman gap-condition). The theorem asserts that every such ideal $\mathcal{I}$ is finitely representable by a 'magic-tree' $T_{\mathcal{I}}$ with the property that given arbitrary two ideals $\mathcal{J}, \mathcal{K}$, (finite or infinite) the embedding $T_{\mathcal{J}} \preceq_F T_{\mathcal{K}}$ implies that $\mathcal{J}$ is a subset of $\mathcal{K}$. In this talk, we will attempt to demystify the "magic" without getting into technical details. However, we will focus on the converse of the theorem and conjecture that in fact the converse is false. We shall present arguments and supporting examples.