

Toward deciding the $\forall\exists$ -theory of the Σ_2^0 -enumeration degrees

Steffen Lempp

University of Wisconsin–Madison, USA

Abstract: I will report on joint work with Goh, Ng and Soskova on particular extensions of embeddings of finite partial orders into the Σ_2^0 -enumeration degrees: Let P be a finite antichain, and let Q_i ($i \leq n$) each extend P by one point. We will present a complete decision procedure on when an embedding of P into the Σ_2^0 -enumeration degrees can be extended to an embedding of Q_i for some $i \leq n$.

This constitutes progress toward the general case of arbitrary finite partial orders Q_i ($i \leq n$) extending an arbitrary finite partial order P , a decision procedure for which would also give a decision procedure for the $\forall\exists$ -theory of the Σ_2^0 -enumeration degrees.