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Degree spectra of analytic complete equivalence relations

We present new results on the complexity of the classification problem of countable structures and their computational complexity. We show that the elementary bi-embeddability relation on the class of graphs is analytic complete under Borel reducibility by giving a reduction from the bi-embeddability relation on graphs. We then compare the degree spectra with respect to these equivalence relations. The degree spectrum of a countable structure with respect to an equivalence relation E is the set of Turing degrees of structures E equivalent to it. We show that the degree spectra of structures with respect to bi-embeddability and elementary bi-embeddability are related: Every bi-embeddability spectrum of a graph is the set of jumps of Turing degrees in the elementary bi-embeddability spectrum of a graph.