Reverse Mathematics and Topology

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Abstract: Reverse mathematics is a program in the foundations of mathematics whose goal is to determine precisely what axioms are required to prove classical mathematical theorems. The program sits at the interface of proof theory and computability theory because the axiomatic strength of a theorem is closely related to the computability-theoretic complexities of the sets, functions, etc. that the theorem asserts to exist. In this talk, we introduce the reverse mathematics program and give an overview of recent work in the reverse mathematics of analysis and topology, such as work on the Tietze extension theorem and on Ekeland’s variational principle. This talk includes joint work with David Fernández-Duque and Keita Yokoyama.

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https://wiu.zoom.us/j/98324032437