

STRUCTURAL REFLECTION AND SHREWD CARDINALS

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ABSTRACT. In my talk, I want to present work dealing with the interplay between extensions of the *Downward Löwenheim–Skolem Theorem* to strong logics, large cardinal axioms and set-theoretic reflection principles, focussing on the characterization of large cardinal notions through model- and set-theoretic reflection properties. The work of Bagaria and his collaborators shows that various important objects in the middle and upper reaches of the large cardinal hierarchy can be characterized through principles of *structural reflection*. I will discuss recent results dealing with possible characterizations of notions from the lower part of this hierarchy through the principle SR^- , introduced by Bagaria and Väänänen. These results show that the principle SR^- is closely connected to the notion of *shrewd cardinals*, introduced by Rathjen in a proof-theoretic context, and embedding characterizations of these cardinals that resembles Magidor’s classical characterization of supercompactness.

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