
Barcelona Analysis Seminar **2022–2023**

URL. <https://mat.uab.cat/web/seminarianalisi/>

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Time. 15:00 CET

Room. S3 (Universitat de Barcelona)

Online streaming (Zoom). [Click here to join.](#)

The full characterization of global solutions of the obstacle problem and its application to the behavior of the regular part of the free boundary close to singularities

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In this talk we investigate global solutions of the classical obstacle problem. We will see that a conjecture by H. Shahgholian ('92) saying that the coincidence sets of global solutions of the obstacle problem are in the closure of ellipsoids, i.e. ellipsoids, paraboloids, cylinders with one of the two as basis, or half-spaces holds true. We will then apply this characterization of global solutions to obtain a characterization of the behavior of the regular part of the free boundary in the obstacle problem close to singularities.