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Insight into Mercury's interior structure from recent data on its gravity field and spin state

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Mercury's gravity field determined by the MESSENGER mission and accumulated radar measurements about Mercury's spin state provide important constraints on the interior structure of Mercury. In particular, from those data sets Mercury's polar moment of inertia and the moment of inertia of its silicate shell can be determined, which contains information on the core radius and on the core's light elements concentration. In this study our goal is to study to what precision those two parameters and other parameters specifying the mantle and the crust can be determined from the moments of inertia and the planet's mass.