

Jupiter internal structure: the role of the equations of state

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Abstract

A better knowledge of Jupiter's atmosphere and internal structure is key to understand the formation and evolution of the biggest giant of the solar system.

Juno mission is orbiting Jupiter since July 2016 and its highly accurate gravity measurements [1, 2, 3] are causing a revolution in our knowledge of the planetary interior and atmosphere, leading to a much better comprehension of the big giant [4, 5, 6].

We use this outstanding gravity data to perform models of Jupiter's internal structure and test different parameters to get a better understanding of Jupiter's interior. Our results show that the accuracy of interior model calculations still relies on the determination of the properties of hydrogen and helium at high pressures [7, 8, 9, 10]. In this talk I am going to show the effect of different equations of state in Jupiter internal structure and in the determination on its differential rotation.

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