Title: Giant Planet Interiors: Things we (don't) know

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The solar-system giant planets are of two types: Jupiter and Saturn, the gaseous planets, and Uranus and Neptune, the 'ice giants'.
First, I will discuss how planetary interiors are modeled, and describe present interior models of the four giant planets. I will then present the main uncertainties in the planetary interior structures.

Jupiter's interior, consists mainly of hydrogen and helium, is difficult to model mainly due to the uncertainly in the hydrogen equation of state at high pressures and temperatures. Saturn's interior modeling is challenging due to the possibility of helium separation from molecular hydrogen, and the fact that its rotation period is not known.

Uranus and Neptune interiors are least understood. Available data are limited, and the planetary shapes and rotation periods (profiles) are poorly constrained. As a result, there is a large uncertainty in their planetary structures and compositions.

Finally, additional open questions and future investigations will be discussed.