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A thermal evolution model for the H chondrite parent body by fitting empirical H chondrite cooling ages.

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We present a numerical model for the thermal evolution of asteroids that is applied to the H chondrite parent body. It is a one-dimensional model where the heat conductivity and hydrostatic pressure equations are solved with a finite difference method. We included sintering in the model by using a hot isostatic pressing model and cold pressing. Heating is by ^{26}Al and ^{60}Fe and long-lived isotopes. We use empirical cooling age data of H chondrites to constrain the initial parameters of the H chondrite parent body such as radius, formation time, initial porosity, etc., by applying a genetical algorithm. We present sets of possible initial parameters of the H chondrite parent body that result in excellent agreement between the thermal evolution model and empirical cooling ages.

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