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# Perturbation of the Jovian thermosphere by a transient solar wind pulse

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The importance of the Jovian thermosphere with regard to magnetosphere-ionosphere coupling is often neglected in magnetospheric physics. We simulate the response of the ionosphere-thermosphere and aurorae to transient variations in solar wind pressure, by coupling a simplified magnetosphere model with an azimuthally symmetric global circulation model. The Jovian magnetosphere in our simulations is compressed from an expanded steady-state over a period of 90 minutes, moving inward from a standoff distance of 85 RJ to 45 RJ. We present the ensuing response of the thermospheric momentum sources, and the resulting auroral signatures of this transient event. We find significant changes in ion drag and momentum advection, as well as a significant brightening of the main aurora by a factor of $\sim$4.5.