

Abstract Submitted  
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**Organization of atmospheric convection in a simplified atmospheric model**<sup>1</sup> STIPO SENTIC, SHARON SESSIONS, New Mexico Tech — Atmospheric convection can spontaneously aggregate into intensely precipitating regions surrounded by extremely dry air. This phenomena may be related to hurricane formation, and may be especially important in a warming climate. Modeling self-aggregation of deep convection is difficult because some numerical models are able to reproduce the phenomenon while others are not and it is not understood why. A recent study by Craig and Mack (2013) modeled convective self-aggregation by assuming an experimental relationship between precipitation and atmospheric moisture content. The actual relationship between moisture and precipitation is still under scientific debate, so we explore the sensitivity of self-aggregation in the Craig and Mack model do different precipitation-moisture dependencies. We find that the specific precipitation-moisture relationship strongly influences aggregation in this model. This finding may help us understand why more complex numerical models do not produce self-aggregation of convection, based on their intrinsic precipitation-moisture relationships.

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