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**A simple model for transport control as a possible mechanism for the I-mode and other enhanced confinement regimes** DAVID NEWMAN, Univ. of Alaska Fairbanks, RAUL SANCHEZ, Univ. Carlos III de Madrid, PAUL TERRY, Univ. of Wisconsin-Madison — Over the last 2 decades, simple dynamical models have been able to capture a remarkable amount of the dynamics of the core and edge transport barriers found in many devices, including the often disconnected nature of the electron thermal transport channel sometimes observed in the presence of a standard ("ion channel") barrier. By including in this rich though simple dynamic transport model an evolution equation for electron fluctuations we have investigated the interaction between the formation of the standard ion channel barrier and the somewhat less common electron channel barrier. Further adding to this model a simple model for phase effects, due to multiple instabilities, between the transported fields such as density and temperature, we can investigate whether the dynamics of more continuous transitions such as the I-mode can be captured and understood. If so, what can the model tell us about control knobs for these promising regimes?

David Newman
Univ. of Alaska Fairbanks

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