

SPATIAL EARLY WARNING SIGNALS FOR RAPIDLY FORCED SYSTEMS

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Early warning signals for tipping points usually assume a slow change in the control parameter. However for Earth system tipping points the control parameter (Earth's temperature rise) is changing rapidly. For many tipping elements, the forcing is changing faster than the internal timescales of the tipping elements themselves. In this case, the usual early warning signals may be ineffective. We show that using spatial information to calculate early warning signals can help mitigate this problem.