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Spinodals in the Ising Model with Short-Ranged Interactions in the Hyperbolic Plane: True, Dynamic, and Thermodynamic<sup>1</sup> HOWARD RICHARDS, Physics, Marshall University — In the Euclidean Plane, the shortranged Ising model does not have true metastability – the lifetime of the "metastable" state is always finite – and therefore it has no true spinodal field. They do have, though, a "thermodynamic spinodal", in which the mode of decay switches from the nucleation and growth of one or more critical droplets to a subcritical fluctuation spanning the system and then growing in a quasi-one-dimensional fashion. They also have a "dynamic spinodal", which marks the transition from deterministic decay to stochastic decay. These two "spinodals" are distinct from each other and have different values. In contrast, the short-ranged Ising model in the hyperbolic plane **does** have true metastability, and, in the limit of large systems, its true spinodal, thermodynamic spinodal, and dynamic spinodal all coincide.

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