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To Explore Complex Phenomena in Hydrothermal Ore-forming Processes by CNN and Its Local Activity Theory

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Under the theory that the onset of ore-forming is at the edge of chaos, by the method of determining the domain of local activity, complexity phenomena like dynamic and static patterns, order from disorder, chaos and catastrophe were simulated by the application of 2-D reaction-diffusion CNN of two state variables and two diffusion coefficients transformed from Zhabotinksii model. They revealed in some extent the mechanism of hydrothermal ore-forming processes, and answered several questions about the onset of ore forming.