Structural properties of explosive percolations on low-dimensional systems WOOSIK CHOI, Kyung Hee Univ - Seoul, HUISENG CHAE TEAM, SOON-HYUNG YOOK TEAM, YUP KIM TEAM — To understand transition nature, we investigate structural properties of spanning clusters of the various explosive percolation(EP) models in lower dimensions. By studying the fractal dimensions of cutting bonds of the spanning cluster, it is shown that the transition in site models and the bond models which relatively enhances the intra-bond occupation is discontinuous. In contrast, the intra-bond-suppressed models undergo the continuous transition. In discontinuous transition models, fractal dimensions of cutting bonds (d_{cut}) is less than or equal to 0. In continuous transition models, we find $d_{cut} > 0$. When the transition is continuous, we also confirm that d_{cut} is equal to $1/\nu$ [1] as in ordinary percolation, where ν is the correlation length exponent. [1] M.B. Isichenko, Rev. Mod. Phys, 64, 961 (1992).

Woosik Choi
Kyung Hee Univ - Seoul

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