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**Explosive Percolation in the Human Protein Homology Network**

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— We study the explosive character of the percolation transition in a real-world network. We show that the emergence of a spanning cluster in the Human Protein Homology Network (H-PHN) exhibits similar features to an Achlioptas-type process and is markedly different from regular random percolation. The underlying mechanism of this transition can be described by slow-growing clusters that remain isolated until the later stages of the process, when the addition of a small number of links leads to the rapid interconnection of these modules into a giant cluster. Our results indicate that the evolutionary-based process that shapes the topology of the H-PHN through duplication-divergence events may occur in sudden steps.

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