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*Cycle-continuous mappings – order structure*

Given two graphs, a mapping between their edge-sets is *cycle-continuous*, if the preimage of every cycle is a cycle. This is motivated by Jaeger's conjecture: every bridgeless graph has a cycle-continuous mapping to the Petersen graph. Answering a question of DeVos, Nešetřil, and Raspaud, we prove that there is an infinite set of graphs with no cycle-continuous mapping between them. Extending this result, we show that every countable poset can be represented by graphs and existence of cycle-continuous mappings between them. We utilize construction of snarks by repeated 3-joins and a result of Hubička and Nešetřil on homomorphisms of paths.