

## PRCF-bad Graphs of Higher Girth

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An edge coloring of a finite, simple graph  $G$  is said to be *proper rainbow-cycle-forbidding* (PRCF, for short) if no two incident edges receive the same color, and for any cycle in  $G$ , at least two edges of that cycle receive the same color. A graph  $G$  is categorized as *PRCF-good* if it has a PRCF-coloring, and  $G$  is deemed *PRCF-bad* otherwise. In ongoing work, Hoffman, et al. consider PRCF-bad graphs and give numerous examples of such graphs having girth less than or equal to 4. They then ask if there exists a PRCF-bad graph of girth 5. In this talk, we will give a straightforward counting argument proving that the Hoffman-Singleton graph is such a graph.

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