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**Linyuan Lu\*** (lu@math.sc.edu), Columbia, SC 29208, and **Xing Peng**. *A Fractional Analogue of Brooks' Theorem.*

Let  $\Delta$  be the maximum degree of a connected graph  $G$ . Brooks' theorem states that the only connected graphs with chromatic number  $\Delta + 1$  are complete graphs and odd cycles. Here we proved a fractional version of Brooks' theorem: we classified all connected graphs  $G$  with the fractional chromatic number  $\chi_f(G) \geq \Delta$ . (Received January 19, 2011)