1073-05-55 **Xing Peng*** (pengx@mailbox.sc.edu), Department of Mathematics, University of South Carolina, Columbia, SC 29208, and **Linyuan Lu** (lu@math.sc.edu), Department of Mathematics, University of South Carolina, Columbia, SC 29208. *A Fractional Analogue of Brooks' Theorem.*

Let Δ 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 $\chi_f(G) \geq \Delta$. (Joint work with Linyuan Lu) (Received July 24, 2011)