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Kabe A. Moen* (moen@math.ku.edu), Department of Mathematics, University of Kansas, Snow Hall, Lawrence, KS 66045-7523. *Weighted Inequalities for Multilinear Fractional Integral Operators.*

A weighted theory for multilinear fractional integral operators and maximal functions is presented. Sufficient conditions for the two weight inequalities of these operators are found, including “power and logarithmic bumps” and an A_∞ condition. For one weight inequalities a necessary and sufficient condition is then obtained as a consequence of the two weight inequalities. As an application, Poincaré and Sobolev inequalities adapted to the multilinear setting are presented. (Received September 14, 2008)