

**Title:** Radon-Brascamp-Lieb Inequalities and Model Operators

**Abstract:** We will discuss a new necessary and sufficient testing condition for  $L^p$ -boundedness of a class of multilinear functionals which includes both the Brascamp-Lieb inequalities and generalized Radon transforms associated to algebraic incidence relations. Via this testing condition, we examine the problem of characterizing so-called "model operators" which satisfy the largest possible range of local  $L^p \rightarrow L^q$  inequalities for any fixed dimension and codimension.