1026-52-60   **Joseph H.G. Fu*** (`fu@math.uga.edu`), Department of Mathematics, University of Georgia, Athens, GA 30606. *Valuation algebras and integral geometry.*

S. Alesker has shown that the space $Val(V)$ of smooth translation-invariant convex valuations on a finite dimensional real vector space V may be viewed as a graded algebra in a natural way. Restricting to the subspace Val^G of valuations invariant under the linear action of an appropriate group G, this structure turns out to be an inverted form of the array of kinematic formulas for G. Intertwining with Alesker's duality operator yields the equally natural, but less well known, array of additive kinematic formulas. From this perspective the classical case, where V is euclidean and $G = O(V)$, is the trivial ground case. Of greater interest is the first nontrivial case, where V is hermitian and $G = U(V)$. Part of this is joint work with A. Bernig. (Received February 08, 2007)