Monge-Ampère operators and invariant valuations on convex functions

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Convex valuatios, i.e. finitely additive functionals on the space of convex bodies, play an important role in Convex, Differential, and Integral Geometry. In recent years, the advances in Geometric Valuation Theory have sparked interest in valuations on convex functions. I will present some of these developments with a focus on classification results for invariant valuations. We will in particular discuss a geometric construction of certain Monge-Ampère type operators used in the construction of these functionals and how their properties are used in the proof of the characterization results.