

## Valuations on Convex Functions

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A function  $Z$  defined on a space of real-valued functions  $\mathcal{F}$  and taking values in an Abelian semigroup is called a *valuation* if

$$Z(f \vee g) + Z(f \wedge g) = Z(f) + Z(g)$$

for all  $f, g \in \mathcal{F}$  such that  $f, g, f \vee g, f \wedge g \in \mathcal{F}$ . Here  $f \vee g$  is the pointwise maximum of  $f$  and  $g$ , while  $f \wedge g$  is their pointwise minimum. The important, classical notion of valuations on convex, compact sets is a special case of the rather recent notion of valuations on function spaces.

We discuss results on valuations defined on various spaces of convex functions. Classification theorems for  $SL(n)$  invariant valuations and the existence of a homogeneous decomposition for epi-translation invariant valuations are presented.

(Based on joint work with Andrea Colesanti and Fabian Mussnig)