

## Module Valuations and Quasi-Valuations

**Authors :** Shai Sarussi

**Abstract :** Suppose  $F$  is a field with valuation  $v$  and valuation domain  $O_v$ , and  $R$  is an  $O_v$ -algebra. It is known that there exists a filter quasi-valuation on  $R$ ; the existence of a quasi-valuation yields several important connections between  $O_v$  and  $R$ , in particular with respect to their prime spectra. In this paper, the notion of a module valuation is introduced. It is shown that any torsion-free module over  $O_v$  has an induced module valuation. Moreover, several results connecting the filter quasi-valuation and module valuations are presented.

**Keywords :** valuations, quasi-valuations, prime spectrum, algebras over valuation domains

**Conference Title :** ICLAA 2021 : International Conference on Linear and Abstract Algebra

**Conference Location :** Tokyo, Japan

**Conference Dates :** September 09-10, 2021