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Equipped posets of finite growth and their representations (25-30)

We consider posets (partially ordered sets) with some simple additional structure, called equipped posets. Their representations can be naturally determined, in particular, over the pair (R,C) of the real and complex fields, and lead to some matrix problems of mixed type over this pair. The correlation with the representations of ordinary posets is analogous to the correlation of representation of valued graphs with representations of ordinary graphs. One of the main objects of the talk is to present the criterion for equipped posets to be of finite growth. It was announced by the author in 1998 in Bielefeld, at ICRTA-8.5, with a rather long and complicated proof based exceptionally on using the differentiation. Now we have at our disposal a modified and relatively short proof which uses both the differentiation algorithms and the induced representation technique. The last notion concerns the natural correspondence between representations of the initial equipped poset P over (R,C) and representations over C of the evolvent of P (i.e. of some ordinary poset obtained from P by doubling several its points). It appears that the differentiation is well combined with the inducing. Besides of the criterion, we will present the complete list of the sincere equipped posets of finite growth extending the corresponding list for ordinary posets.