Positive operators as real valued functions

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This talk is a short report of my recent work with Lajos Molnár. We explored some functional representations of positive Hilbert space operators. These are embeddings of the set of positive operators into the set of non-negative real valued functions associated to positive operators. The set of positive operators carries two important order structures: the usual order or Löwner order and the spectral order or Olson order, and the embeddings we are studying transport these orders on operators to pointwise order on functions. Moreover, they present some very interesting algebraic and topological properties.