A general abstract approach to approximation properties in Banach spaces

Geraldo Botelho (Universidade Federal de Uberlndia — Brazil)

In this talk we propose a unifying approach to many approximation properties studied in the literature from the 1930s up to our days. To do so, we say that a Banach space E has the $(\mathcal{I}, \mathcal{J}, \tau)$-approximation property if E-valued operators belonging to the operator ideal $\mathcal{I}$ can be approximated, with respect to the topology τ, by operators belonging to the operator ideal $\mathcal{J}$. Restricting τ to a class of linear topologies, which we call *ideal topologies*, this concept recovers many classical/recent approximation properties as particular instances and several important known results are particular cases of more general results that are valid in this abstract framework.