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Tower multitype and compactness of the $\bar{\partial}$ -Neumann operator in complex manifolds

In this talk, I will discuss a new approach to establishing compactness of the $\bar{\partial}$ -Neumann operator on (p, q) -forms on not necessarily pseudoconvex domains in complex manifolds. I will introduce a construction called the tower multitype and use it to build a stratification of the boundary. The stratification implies Property (P_q) which in turn implies compactness of the $\bar{\partial}$ -Neumann operator. I will also provide examples.

The result is joint work with Professor Dmitri Zaitsev of Trinity College Dublin.