

Interpolation of compactness by Calderón's complex method

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I will give a general overview of Alberto Calderón's complex interpolation spaces $[A_0, A_1]_\theta$, hopefully with time to include brief mentions of some of their more exotic and beautiful properties.

In 1963 Calderón showed that whenever a linear operator T is compact from A_0 to B_0 and bounded from A_1 to B_1 , then it is also compact from $[A_0, A_1]_\theta$ to $[B_0, B_1]_\theta$, provided B_0 and B_1 satisfy an additional condition, a certain approximation property.

I will survey the efforts since then towards obtaining Calderón's result without imposing his or other side conditions. This will include reports about two recent advances, one in collaboration with Svante Janson, and a remarkable "almost counterexample" discovered by Fedor Nazarov.