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On a uniform approach to singular integral operators. (English) [\[Zbl 1151.42304\]](#)

Duong, Xuan Thinh (ed.) et al., International conference on harmonic analysis and related topics. Papers from the conference celebrating Professor Alan G. R. McIntosh on the occasion of his 60th birthday, Macquaire University, Sydney, Australia, January 14–18, 2002. Canberra: Australian National University, Centre for Mathematics and its Applications (ISBN 0-7315-5205-9/pbk). Proc. Cent. Math. Appl. Aust. Natl. Univ. 41, 1-16 (2003).

Summary: The essence of an approach to the boundedness of singular integral operators based on several parameterized classes of new conditions one of which includes, in particular, Hörmander condition and its known variations is exposed. Most of the attention is paid to the comparison with known results in the same settings. The feature of dependence from some parameters being integer is revealed. As an application, the existence of functional calculus and variants of Littlewood-Paley-type decompositions in its terms without any requirements of smoothness or absolute value bounds of the kernels of the corresponding holomorphic semigroups is shown.

For the entire collection see [\[Zbl 1052.42001\]](#).

MSC:

- [42B20](#) Singular and oscillatory integrals (Calderón-Zygmund, etc.)
- [47A60](#) Functional calculus for linear operators
- [47G10](#) Integral operators