Function spaces via heat kernel estimates

Tommaso Bruno

Dipartimento di Matematica, Università di Genova, Via Dodecaneso 35, 16146 Genova, Italy
brunot@dima.unige.it

I will discuss a theory of function spaces defined in terms of a self-adjoint operator whose heat kernel satisfies Gaussian estimates together with its derivatives. This includes inhomogeneous and homogeneous Besov and Triebel–Lizorkin spaces on Lie groups and Grushin settings [1, 2, 3].

References

[1] T. Bruno, *Homogeneous algebras via heat kernel estimates*, Trans. Amer. Math. Soc. (2022) DOI: https://doi.org/10.1090/tran/8697

[2] T. Bruno, M. M. Peloso, A. Tabacco, M. Vallarino, *Sobolev spaces on Lie groups: embedding theorems and algebra properties*, J. Funct. Anal. 276, 3014–3050 (2019).

[3] T. Bruno, M. M. Peloso, M. Vallarino, *Besov and Triebel–Lizorkin spaces on Lie groups*, Math. Ann. 377, 335–377 (2020).