

cases	doc_1		doc_2		decision	id
			authors	<ul style="list-style-type: none"><li>G. Tranquilli</li></ul>	DUPLICATES	1234
	authors	<ul style="list-style-type: none"><li>Giorgia Tranquilli</li></ul>	title	Global normal forms and global properties in functionspaces for second order Shubin type operators		
	title	Global normal forms and global properties in functionspaces for second order Shubin type operators	publication_date	2014-05-09 00:00:00		
	publication_date	2014-05-09 00:00:00	source	SupportedSources.SEMANTIC_SCHOLAR		
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	journal		volume			
	volume		doi			
	doi	None	urls	<ul style="list-style-type: none"><li>https://www.semanticscholar.org/paper/bf4a61ddd82f651894b32d51babc6b6c269c8ecf</li></ul>		
	urls	<ul style="list-style-type: none"><li>https://openalex.org/W194460914</li></ul>	id	id26969137399505938		
	id	id7245145379400653303	abstract	We investigate the reduction to global normal forms of second order Shubin(or G) type differential operators $P(x;D)$ in functional spaces on $R_n$ . We describe the isomorphism properties of normal form transformations, introduced by L. Hormander for the study of affine symplectic transformations acting on pseudodifferential operators, in spaces like the Schwartz class, the weighted Shubin-Sobolev spaces and the Gelfand-Shilov spaces. We prove that the operator $P(x;D)$ and the normal form $PNF(x;D)$ have the same regularity/solvability and spectral properties. We also study the stability of global properties of the normal forms under perturbations by zero order Shubin type pseudodifferential operators and, more generally, by operators acting on $S(R_n)$ and admitting discrete representations. Finally, we study Cauchy problems on $R_n$ globally in time for second order hyperbolic equations $P(x;D)+R(x;D)$ , where $P(x;D)$ is a second or der self-adjoint globally elliptic Shubin pseudodifferential operator and $R(x;D)$ is a first order pseudodifferential operator.		
	abstract		versions			
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