Pseudodifferential operators on $\mathcal{S}_\omega\big(\mathbb{R}^d\big)$

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It is well-known that rapidly decaying functions belong to the Schwartz class $\mathcal{S}\big(\mathbb{R}^d\big)$. In this talk we will consider a non-quasianalytic weight function ω and introduce a smaller space, denoted by $\mathcal{S}_\omega\big(\mathbb{R}^d\big)$. A characterization of the space in terms of seminorms presented in [1] is useful in the study of the pseudodifferential operators. We will focus on the behaviour of the operator

$$I(f) = \iint e^{i(x-y)\cdot\xi} a(x,y,\xi) f(y) dy d\xi$$

in $\mathcal{S}_\omega\big(\mathbb{R}^d\big)$ using some notion from [2].

References

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[2] B. Prangoski. Pseudodifferential operators of infinite order in spaces of tempered ultradistributions. *J. Pseudo-Differ. Oper. Appl.*, 4(4):495–549, 2013.