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INVARIANT HYPERFUNCTIONS ON REGULAR PREHOMOGENEOUS VECTOR SPACES OF COMMUTATIVE PARABOLIC TYPE

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Abstract. Let $(G_{\boldsymbol{R}}^{+}, \rho, V)$ be a regular irreducible prehomogeneous vector space defined over the real field $\boldsymbol{R}$. We denote by $P(x)$ its irreducible relatively invariant polynomial. Let $V_1 \cup V_2 \cup \cdots \cup V_l$ be the connected component decomposition of the set $V - \{x \in V; P(x) = 0\}$. It is conjectured by [Mr4] that any relatively invariant hyperfunction on V is written as a linear combination of the hyperfunctions $|P(x)|_i^s$, where $|P(x)|_i^s$ is the complex power of $|P(x)|^s$ supported on V_i. In this paper the author gives a proof of this conjecture when $(G_{\boldsymbol{R}}^{+}, \rho, V)$ is a real prehomogeneous vector space of commutative parabolic type. Our proof is based on microlocal analysis of invariant hyperfunctions on prehomogeneous vector spaces.

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