

A NOTE ON A STRUCTURE THEOREM FOR PREHOMOGENEOUS VECTOR SPACES

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Abstract. In this note, we give a structure theorem for all prehomogeneous vector spaces defined over the complex number field \mathbb{C} . Also it means a necessary and sufficient condition for a triplet (G, ρ, V) defined over \mathbb{C} to be a prehomogeneous vector space. For this purpose, we give a general structural correspondence between isotropy subgroups and fixed point sets when a group acts on a non-empty set.

Key Words and Phrases: Prehomogeneous vector space, representation theory of groups, fixed point.

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