

MATRYOSHKAS, CHRISTMAS TREES AND PARTIAL REPRESENTATIONS

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In this talk, we explore the structure of the category of partial representations of a finite group G , which coincides with the category of representations of a groupoid constructed out of the group. We describe the simple objects in this category looking at the structure of the groupoid algebra. Also, we describe the monoidal structure of the category of partial representations of G . For any subgroup H of G , there is a functor from the category of representations of H into the category of partial representations of G which is monoidal, additive, faithful and injective on objects, this is the Christmas Tree's Theorem. For a finite abelian group G and a subgroup H of G , there is a functor from the category of partial representations of H into the category of partial representations of G which is also monoidal, additive, faithful and injective on objects, this is the Matryoshka's Theorem.