

# Lie Group and Representation Theory Seminar

Date: December 19 (Fri), 2003, 15:30–16:30  
Place: RIMS 402  
Speaker: Pavle Pandzic (Zagreb & RIMS)  
Title: Some exceptional dual pair correspondences

## Abstract:

This talk describes results from a joint paper with Huang and Savin published in *Duke Math. J.* in 1996.

Let  $G$  be the adjoint group of the Lie algebra of type  $F_4, E_6, E_7$  or  $E_8$  with real rank four. (For  $F_4$ ,  $G$  is replaced with its double cover). There is a dual pair  $G_2 \times H$  in  $G$ , with  $G_2$  the split real group of type  $G_2$  and  $H$  compact.

We restrict the minimal representation of  $G$  constructed by Gross and Wallach to this dual pair and obtain the explicit Howe correspondences. For an irreducible (finite-dimensional) representation  $E$  of  $H$ , we first calculate the  $K$ -types of  $\Theta(E)$  using some “see-saw” techniques and branching laws. Then we identify  $\Theta(E)$  in the unitary dual of  $G_2$  as given by Vogan.

Finally, we show that our results can serve as examples of Langlands correspondences.

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Prior to the seminar, Pandzic will give an introductory seminar from 11:00–12:00 at 402.

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