Multicomponent Group-Related Coherent States for Lie Group Chain G\supset K

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Abstract: The multicomponent group-related coherent states for the Lie group chain $G\supset K$ are introduced. Their coupling coefficients are presented. The relations between these coupling coefficients and those (in the usual sense) of the irreducible representation bases labelled by $G\supset K$ are obtained. The generalized Racah's factorization lemma about the coupling coefficients of such coherent states is given. As an example, the multicomponent group-related coherent states for the Lie group chain $Sp(4)\supset SO(3)_1 \otimes SO(3)_2$ are found. The uncertainty relation and the squeezing property are discussed.

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