

# 740<sup>th</sup> ASRC Seminar

Date: Dec. 6 (Thu), 13:00~

Location: Room 103, ASRC Bldg.

Speaker: Dr. Veljko Dmitrasinovic  
(Institute of Physics, Belgrade)

Title: Ordering of Low-Lying Three-  
Quark Bound States

## Abstract:

We apply the recently developed theory of permutation-symmetric  $O(6)$  hyperspherical harmonics to the quantum-mechanical problem of three non-relativistic quarks confined by a spin-independent 3-quark potential. Previously derived group-theoretical results are used to reduce the three-body Schroedinger equation to a set of coupled ordinary differential equations in the hyper-radius  $R$  with coupling coefficients expressed entirely in terms of (i) a few interaction-dependent  $O(6)$  expansion coefficients and (ii)  $O(6)$  hyperspherical harmonics matrix elements. This system of equations allows a solution to the eigenvalue problem with homogeneous 3-quark potentials, which class includes a number of standard Ansatzes for the confining potentials, such as the Y- and Delta-string ones.

なお、今回のセミナーは、第78回「原子核ハドロン物理セミナー」  
を兼ねております。セミナー内容は  
[http://silver.j-parc.jp/hadron/hadron\\_seminar/index.html](http://silver.j-parc.jp/hadron/hadron_seminar/index.html)  
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