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Recommendation letter

By this letter I recommend to put forward Professor Peter Hess for the award "Premio Universidad Nacional".

Prof. P. Hess is very well known in the nuclear physics community by his extraordinary contribution into development of the nuclear structure physics. His first investigations have been devoted to the development of the general collective quadrupole model and its application to description of the properties of the low-lying collective states of heavy nuclei. Later on he has published several papers developing the Bohr-Mottelson Collective Model and the Interacting Boson Model. Several publications of Prof. P. Hess are devoted to development of the group theoretical technique, which is used intensively in many nuclear models, and its application in the theory of nuclear structure. He has also investigated pseudospin symmetry and an application of the nuclear pseudo-SU(3) approach to investigations of the nuclear structure problems.

A significant part of the publications of Prof. P. Hess are devoted to development of the nuclear cluster model and its application to investigations of the properties of the nuclear molecular states, fusion reactions, clusterization and spontaneous fission. He has developed a collective model of the trinuclear molecules which is important, for instance, for the investigations of the cluster radioactivity.

In the recent years Prof. P. Hess contributed also into a development of the nuclear Density Functional Theory. He has suggested a method to derive the nonrelativistic limit of a selfconsistent relativistic effective field theory applied to nuclear physics problems. It was shown that the standard v/c expansion yields Galilean invariance only to first order in v/c, whereas second order is required to obtain important contributions such as the spin-orbit force. A modified procedure has been developed which leads to correct Galilean invariant result. In the last years Prof. P. Hess has started theoretical investigations of the structure of the superheavy nuclei.

In the scientific work Professor Hess wasn't limited by investigations of the nuclear structure only. He is also an author of the series of papers on Quantum Chromodynamics and General Relativity.

Considering scientific results obtained by Prof. P. Hess I am sure that he deserves the award "Premio Universidad Nacional"

Prof. R.V.Jolos