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To: Dr. Miguel Alcubierre Moya Instituto de Ciencias Nucleares, Universidad Nacional Autónoma de México Ciudad Universitaria, Circuito Exterior S/N, A.P. 70.543 04510 Mexico City, Mexico

I write this letter in support of the proposal that Peter Otto Hess receives the title "profesor emérito" of the "Universidad Nacional Autónoma de México".

Prof. Hess has an outstanding record of scientific publications, membership in highly regarded academic institutions and teaching of theoretical physics. I will confine my considerations on his scientific activities to only a few of the main topics where he gained such a reputation that these alone justify the proposal initiated at UNAM.

While student at J.W. Goethe University, Peter Hess played an instrumental role in developing the so-called *Generalized Collective Model* (GCM). I consider that this phenomenological model propose the most elaborate treatment of the collective nuclear Hamiltonian that is able to describe simultaneously spherical nuclei, displaying a pure vibrational spectrum, up to well deformed rotators at high spins. The physics encoded in this model and even the power of prediction outrun by far another nuclear collective model, more popular among experimentalists and in the entourage of north-american universities and journals, known as IBM. It does not come to a surprise that eventually GCM received in the literature the surname *Frankfurt Collective Model*. Using this model, Peter Hess and his collaborators from the Institut für Theoretische Physik (Frankfurt am Main) were able, among many other interesting results, to explain the backbending structure of the yrast band in Pt, Os and W isotopes. An entire chapter, based on massively on the work of Peter Hess, was allocated in the monumental volume of J. Eisenberg and W. Greiner on nuclear models.

In more recent time, in collaboration with Walter Greiner, Peter Hess proposed a new variant of the General relativity theory which avoids the coordinate singularities (2007). This framework was dubbed *pseudo-complex General Relativity* (pc-GR) and one of its main predictions is that large mass concentrations in galaxies are not leading to *black holes!* This is a new and exciting direction in understanding the formation and structure of the Universe. In 2016 Peter Hess and collaborators—published a monograph dedicated to this subject at the prestigious publishing house Springer Verlag. The experimental verification of the consequences of this theory is already under the scrutiny of astrophysical groups and astrononomical facilities around the globe.

Last but not the least one have to look back, where Peter Hess completed his apprenticeship: His Doktorvater (PhD superviser) Walter Greiner, stemed from one of the most prodigious scientific lineages. Sacred monsters such as Karl Weierstrass, Carl Runge or Max Born are found in this genealogy. Obviously Peter Hess proved to be worthy of this heritage.

For all the above reasons I believe that the proposal to award Peter O. Hess the "profesor emérito" should be positively answered.

Bucharest, 12 February 2018

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