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To the Honorable Minister for Italian Public Education Senatrice Valeria Fedeli Ministero dell'Istruzione, dell'Universita' e della Ricerca Scientifica Viale Trastevere 76/a

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Real concern about Italian academic career management system

Dear Minister,

we would like to respectfully draw your attention to an aspect of the Italian academic career management system that will potentially have a highly negative impact on the success of Italian research, at least in the field of fundamental physics.

The problem was brought to our attention by the recent case of LISA Pathfinder, a very successful international mission of the European Space Agency, which last year demonstrated the feasibility of spaceborne gravitational wave observatories, a result of historic impact in the field of Gravitational Wave research at large. LISA Pathfinder was led by an Italian scientific team whose members, we understand, would not qualify any more for their current positions, and actually for any permanent position in Italian universities, according to the recently revised Italian regulations.

We understand that this paradoxical situation originates from a blind evaluation algorithm that compares the publication records of these colleagues to those of the members of the very large collaborations one finds in other branches of physics such as particle physics for example. Also paradoxically, the algorithm assigns the same qualification to all members of these large collaborations, from their leaders down to the lightly involved supporting scholars, often definitely less internationally renowned than the leaders of a small collaboration like LISA Pathfinder.

We would like to respectfully remark, honorable minister, that such a mechanism, had it been in place at the time LISA Pathfinder was initiated almost 20 years ago, would have definitely prevented any Italian group from taking leadership or simply being part of it, as the risk for their personal careers would have been unbearable. It is indeed impossible for highly risky scientific endeavors that have groundbreaking potential, to produce a publication record comparable with that of large mainstream collaborations or large "small-science" communities working on mainstream themes. Not only do groundbreaking endeavors initially concern only the small group of scientists who genuinely understand their significance, but also they typically take many years or even decades to come to fruition. Nevertheless, after the wider community understands their impact, they make their scientists and universities famous.

It is also an easy prediction that the international leadership Italy has gained in the field of spaceborne gravitational wave observatories may quickly be lost, should the regulations keep jeopardizing the academic careers of the involved teams.

Bibliometric analysis does indeed carry some useful information, but it is not internationally recognised to base hiring or promotion decisions on automatic algorithms, particularly if they end up comparing activities that are not comparable. Those decisions, in leading universities worldwide, are always based on a case-by-case examination by a competent panel of peers. Indeed, based on our own experiences, we are all of the opinion that the Italian leaders of the LISA Pathfinder team would qualify for an appointment at the top professorial level of any first-rank US or European university.

The Italian historical record in physics is outstanding. A good part of such success rests on the ability of teams of bright Italian scientists to find new but risky research venues. We are confident



that you, your Honor, in your wisdom, will find ways to correct such an automatic mechanism that, if unchanged, may endanger this great scientific tradition.

With best regards,

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Kavli, Breakthrough, Gruber, and Shaw Prizes 2016

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