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# Editorial

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## Marking the Millennium

In the previous editorial, marking the launch of the *Journal of Multi-body Dynamics* [1999, **213**(K1)], I touched upon some of the pioneering contributions in the field of dynamics. The major discoveries by Copernicus, Galileo, Kepler, Newton, Leibniz, Euler and Lagrange were cited there. I extended on this theme further, when given the opportunity of providing an article for the Millennium issue of *Part C, Journal of Mechanical Engineering Science* [Multi-body dynamics: historical evolution and application, *Proc. Instn Mech. Engrs*, 2000, **214**(C1)].

Interestingly, the impetus for many of the major advances in the field of dynamics, which can be best termed as *physics of motion*, came about as the result of intense curiosity in celestial motions. The aforementioned article briefly covered the period 1543–1790. More detail was provided later when the Second International Symposium on *Multi-body Dynamics: Monitoring and Simulation Techniques* (PEP Publications, June 2000) coincided with the tri-Centenary of the birth of Daniel Bernoulli, prompting a tribute to him, which covered the scientific advances in the field of dynamics during the period 1700–1790 in more detail [Foreword—A tribute to Daniel Bernoulli (1700–1782): mathematical–physical renaissance in mechanics of motion].

A second renaissance in physics of motion, again in part prompted by celestial dynamics, took place during the late 1890s to 1920. In this period, the basis of classical Newtonian physics was questioned and some of its long-standing shortcomings were resolved with ingenious contributions, chiefly by Einstein, although one must also acknowledge the significant roles played by others, such as Fitzgerald, Lorentz, Weyl, Minkowski and Born. This issue of the *Journal of Multi-body Dynamics*, being the first in the new Millennium, provides me with an opportunity to recall their contributions and in a way make amends for the unintentional shortcomings of the aforementioned articles in this regard. However, to cover the enormous advances made in physics of motion in the last century through an Editorial is to do injustice to the contributors to the field. Thus, in this issue of the Journal I have included a short Technical Note in this regard. However, in order to avoid setting a precedent for including a historical account as a Technical Note, I have included an analysis to gauge the validity of the hypothesis that superluminal light propagation can remain in-line with the general theory of relativity.

**Homer Rahnejat**  
Editor