

Activities of the Working Group on the Newtonian Constant of Gravitation

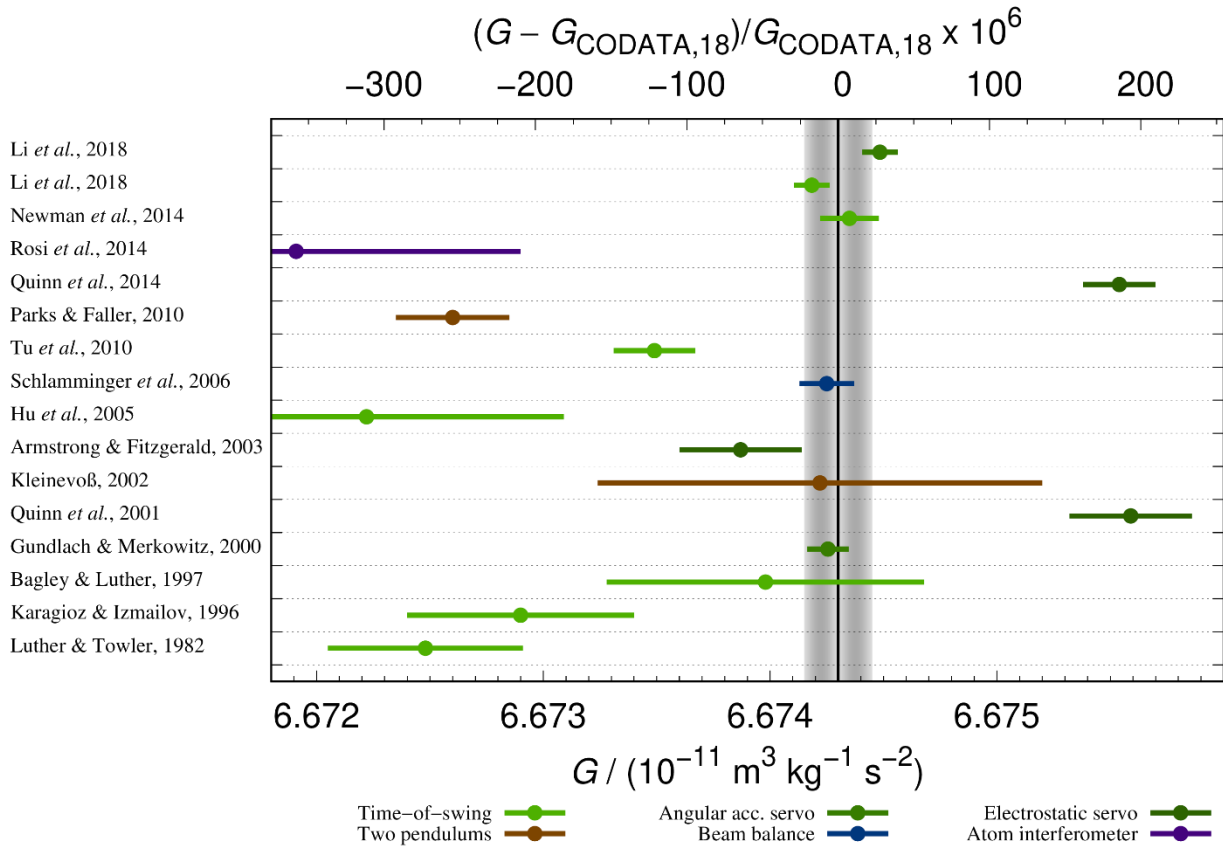
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Introduction

The working group aims to understand the discrepancy between various measurements of the gravitational constant, G . Two new results were published in Nature by the researcher from Huazhong University of Science and Technology. To date, these results have reached the smallest measurement uncertainty. The figure below shows results from measurements of G that were published in the last 37 years. As can be seen from the figure the relative scatter of the results is of order 100 part in 10^6 , while the aforementioned best experiments have relative uncertainties of 12 parts in 10^6 .



Activities

On July 12th, the working group had a face to face meeting at the General Relativity-22/Amaldi-13 conference. Twelve member and guests discussed the current situation of the G results. Furthermore, possible engagements for the working group were considered.

The working group organized a session on the measurement of the Newtonian constant of gravitation at the conference. The well-attended session featured one invited presentation from HUST and several contributed talks.

The working group is actively encouraging researchers to look for systematic uncertainties. At this point, it is more important to understand the discrepancy between different results than to add another result. Even the smaller differences within a single laboratory should be investigated.

The working group is organizing a focus issue on the measurement of the gravitational constant for Metrologia.