

# International Conference on Precision Physics and Fundamental Physical Constants (FFK-2019)



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## Remeasurement of the Eötvös experiment - status and first results

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Roland (Loránd) Eötvös and his colleagues Dezső Pekár and Jenő Fekete made measurements (the EPF measurement) between 1906 and 1908 for validating the equivalence of gravitational and inertial mass. Ephraim Fischbach and his

colleagues reanalyzed the results of the EPF measurement in 1986 and discovered a correlation between the small violations and some atomic parameter. Experimental reproduction of this correlation was unsuccessful, but there is still no valid explanation of these differences in the EPF

results. Our analysis of the EPF experiment pointed to a possible bias that justifies repeating the tests under better conditions and using modern new technology. Another good reason for repeating the EPF measurements is that 2019 –as the 100th anniversary of Eötvös’ death –is referred to as “Eötvös year”. After two years of preparation, in May 2019 tests have been started in a controlled and undisturbed environment of the Jánosy Underground Laboratory at KFKI, 30 meters below ground level. We give a brief overview of the gravity field bias, and report on the challenges, current status and first results of the new experiments.

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