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Radio-science and laser measurements are the best techniques to assess planetary geodesy and fundamental physics in the Solar system. In the last 30 years, our knowledge of the Mars system has been greatly improved thanks to spacecraft missions. Nevertheless, some important issues remain unresolved like the origin of the Mars moons or the size of a Mars internal core. On the other hand, recent determination of post-Newtonian parameter gamma has been obtained with a precision of 10^{-5} thanks to Cassini mission. Here, we present the basics of a new space mission called GETEMME (Gravity Experiment with TimE Metrology on Martian satEllites), which combines an investigation of geophysical properties of Martian system and a fundamental physics package.

Involving one lander on each moon (called Romeo for Phobos and Juliet for Deimos), it consists in a laser link experiment between both satellites with high accuracy. The physical package stands in an atomic clock, a rate gyroscope and a gravimeter carried on each lander, providing time reference, instantaneous tide and rotation state of the moons. As a consequence, this experiment will measure instantaneous distances in the Mars system with a never achieved precision of few tenth of millimeter, providing essential measurements to the moon orbits and their perturbations. Contrary to spacecrafts, natural satellites are free of wheel of loading and atmospheric drag, as well as poorly affected by radiative effects. Hence, only one set of orbital elements per satellite over the whole mission time (three to five years for a nominal mission) will have to be considered resulting in unprecedented approach. Moreover, the scientific data of GETEMME project will continue to improve the quantified physical parameters with an increasing accuracy all over the time of the mission, even several years after the first received data. Here, we focus on the expected results of such a mission to derive fundamental physics parameters.