IAG Scientific Assembly 2025:
Geodesy for a changing environment

Symposium H01: Future Geodetic Satellite Missions and new Technologies

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This is an exciting time for geodesists with new satellite missions at the horizon. They will improve geodetic key products fulfilling the scientific-driven goals set by the Global Geodetic Observing System. GRACE-C, as continuation of the successful missions GRACE and GRACE-FO, is scheduled for launch in 2028. On top of that, ESA is planning a Next Generation Gravity Mission (NGGM) at 400 km altitude with a start date in 2032, which, in combination with GRACE-C, will form the dual-pair mission MAGIC. With the important continuation of the gravity field solutions and their improved resolution in time and space, these missions will be key for a better understanding of the interaction between anthropogenic climate change and natural climate variability. Likewise, but with a focus on the improvement of the terrestrial reference frame, the Genesis satellite will be launched in 2028. Genesis realizes a space tie at 6000 km altitude by connecting two GNSS receivers, a DORIS receiver, an SLR reflector, and a dedicated VLBI transmitter along with an ultra-stable oscillator onboard of the satellite. All instruments along with their positions will be accurately calibrated to guarantee the success of the mission goals. Both types of missions, for the gravity field and the terrestrial reference frame, will use new instruments, e.g., improved accelerometers on NGGM and a dedicated VLBI transmitter on Genesis. We solicit presentations on those upcoming missions, ranging from challenges and opportunities with the new technology to the perspectives and overall goals. Of course, presentations on realistic simulations are critical at this point of the mission development and very welcome in the session.