Session Summary Report

1. Session Name : Gravity, Earth Model, Reference Frame
2. Chairs : Giuseppe Bianco (Agenzia Spaziale Italiana)
   & Koji Matsuo (Kyoto University)
3. Summary
   - 9 presentations
   - Recognition of current situation
     - Various SLR-based gravity solutions of high quality have been presented.
     - Terrestrial Reference Frame (TRF) is being updated/improved.
   - Topics
     - The combined use of multiple SLR satellites is important to recover the Earth's gravity field, as well as to define TRF.
     - GNSS satellites are sensitive to specific gravity coefficients due to the orbital resonance with Earth rotation.
     - Recent mass loss in polar ice sheets bring significant changes in the Earth's gravity field and the Earth Orientation Parameters (EOPs), which is detectable by SLR-based gravimetry.
     - The geophysical fluid contribution must be correctly modeled to improve TRF accuracy, as well as gravity field recovery.

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- Topics (continued)
  - The COSMIC (and future COSMIC-2) satellites data can play a role in recovering temporal variations in the Earth's gravity field.
- Issues
  - Ad-hoc space mission have provided the Earth's gravity field of high accuracy and quality at short wavelengths.
    In the future, it would be necessary to consider and suggest the advantage in using SLR-based gravity solution for geophysical research.
  - Continuous improvement of the TRF accuracy is required to meet GGOS requirements.
- Takeover items to next meeting
  - Above issues