Gravity Field Retrieval of Generation Gravity Missions: Near-Real Time Retrieval Strategy

Anna Purkhauser and Roland Pail

TUM, IAPG, Munich, Germany (anna.purkhauser@tum.de)

Next Generation Gravity Missions (NGGMs) expected to be launched in the midterm future have set high anticipations for an enhanced monitoring of mass transport in the Earth system, establishing their products applicable to new scientific fields and serving societal needs. An increased space-time sampling capability as well as higher accuracies of a new generation of instrumentation enable a near-real time (NRT) processing scheme based on a co-parametrization of low-resolution daily otherwise known as Wiese approach and longer-term gravity field solution, combined with a sliding window averaging. In order to quantify the capabilities of the proposed NRT approach, a numerical closed-loop simulation of a low-low satellite-to-satellite tracking (ll-sst) mission for a two-pair Bender-type constellation with an optimal orbit design and realistic noise assumptions was performed. The approach as well as results of investigated scenarios will be presented to give an overview of the drawbacks and advantages of the methodology.