

Air-Ground Localization and Map Augmentation Using Monocular Dense Reconstruction

Christian Forster, Matia Pizzoli, Davide Scaramuzza
Robotics and Perception Group, University of Zurich, Switzerland

- Ground robot creates ground-based map using laser rangefinder or RGB-D camera.
- Aerial robot streams monocular video to ground-robot which creates dense depth-maps in real-time.
- The alignment of the aerial- and ground-based maps is found by correlation in a Monte Carlo framework.
- Once the aerial robot is localized w.r.t. the ground-robot, the ground-based map is augmented with the aerial views.

