

Presenter:

Erik Günther	Digos GmbH
Dr. Sven Bauer	Geoforschungszentrum Potsdam (GFZ Potsdam)

To optimize manual and autonomous tracking operation under various sky conditions, it is necessary to monitor these conditions. Available commercial off-the-shelf all-sky cameras are often optimized for night time usage which makes daytime use difficult or even requires a second camera optimized for day time.

Having a single all-sky camera provides economic benefits and a simplified design. For cloud detection at day time a color camera is extremely beneficial, but such cameras often cause problems at night, due to high image noise.

We present a concept for an all-sky camera, build from a commercial off-the-shelf analogue color camera with a night mode. The camera is placed within an aluminum housing equipped with heaters to remove dew and raindrops from the copula and to keep the camera in the operational temperature range. In order to process the sensor data, a microcontroller within the housing is used. Furthermore, an adaptive camera image stacking algorithm is implemented to address the high image noise in night mode.