Remote Sensing of Greenhouse Gases

Message from the Guest Editor

The global carbon cycle plays a central role in the Earth system, but a consistent description remains one of the pre-eminent challenges in climate science. Studies of uncertainty in future climate projections suggest that “natural” carbon exchange processes are second only to physical climate sensitivity in importance. This Special Issue invites contributions related to past, current and future satellite missions for CO$_2$ and CH$_4$ with a focus on but not limited to retrieval methods, calibration and validation, related studies using aircraft or ground-based data, results from past or current satellite mission, studies using complementary data streams such as carbon monoxide or solar induced fluorescence, surface flux inversion, new satellite missions, and new instrumentation.

- Global carbon cycle
- Greenhouse gas remote sensing
- Greenhouse gas instrumentation
- Surface flux inversions
- Retrieval algorithms
- Satellite validation and calibration