



## **Trends in Surface Radiation Budgets at Climatic Time Scales**

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For assessment of variability and trends in the Earth Radiation Balance, information is needed at climatic time scales. Satellite observations have been instrumental for advancing the understanding of the radiative balance at global scale, however, due to the frequent changes in the observing systems, the length of available satellite records is limited. In this paper we report on an effort to synthesize satellite observations from independent sources to estimate shortwave, longwave and spectral surface radiative fluxes at climatic time scales and use them to learn about their variability and trends. The radiative fluxes were derived in the framework of the MEaSURES and NEWS programs; they are evaluated against ground observations and compared to independent satellite and model estimates. Attention is given to updates on the radiative balance as compared to what is known from shorter time records and from models.