

## SHORT TERM SCIENTIFIC MISSION (STSM) – SCIENTIFIC REPORT

The STSM applicant submits this report for approval to the STSM coordinator

**Action number: CA16202**

**STSM title: SORBETTO Summer school event**

**STSM start and end date: 01/07/2018 to 06/07/2018**

**Grantee name: Michael Pikridas**

### PURPOSE OF THE STSM/

(max.500 words)

This STSM aimed at my participation at the first SOLar Radiation Based Established Techniques for aTmospheric Observations (SORBETTO) summer school and conference. The goal was dual. First to familiarize me with established techniques of atmospheric remote sensing and also provide me the necessary know-how concerning the operation of a Baseline Surface Radiation Network station. During the summer school I met some of the leading scientists in the field of remote sensing, with which I established contacts.

### DESCRIPTION OF WORK CARRIED OUT DURING THE STSMS

(max.500 words)

Each day of the summer school followed a specific order. During the morning lectures on a specific topic were given. The topics of the summer school were radiometry, photometry, spectrometry and satellite retrievals. One day was about intercomparison campaigns between instruments already shown to the participants. The first lectures were more about fundamentals concerning the topic in question and the related instrumentation. However, SORBETTO was also a conference and some lectures were targeting for the more experienced of the audience dealing with specific issues and vulnerabilities identified for each method/instrumentation.

The afternoon session that followed involved hands on training on the instrumentation that was discussed during the morning session of the same day. For some commercially available instruments this presentation was performed by members of the manufacturing company. For the remaining, the hands on training was from experts who routinely operated these instruments in the field. This session was valued because it linked theory and practical training. Of great importance was the good practice information for each instrument that was shared.

Besides explaining how the theoretical aspects were implemented in an instrument, afternoon sessions also emphasized on how the acquired data should be treated, through exercises each student should solve either

alone or in a group. These exercises involved comparing data from different sensors, often from online databases, or how to make necessary corrections to the measurements.

Each day concluded with a visit at a supersite where the sensors were operating under real life conditions and the complications and function was shown.

#### **DESCRIPTION OF THE MAIN RESULTS OBTAINED**

(max. 500 words)

I enhanced by knowledge on radiative transfer and Mie theory. Familiarized myself with the technicalities of the so-called Langley calibration, an important method used for calibrating remote sensing instruments.

The most important goal was to familiarize myself with the practicalities of operating a BSRN station. In the summer school I met experts in the operation of such station and the head of European calibration centre, Dr Stelios Kazadzis, where the sensors are calibrated. Part of the hands on training involved handling and corrections from the sensors involved in BSRN. Additionally I was informed the procedure to follow so to become a part of BSRN.

#### **FUTURE COLLABORATIONS (if applicable)**

(max.500 words)

A potential collaboration with Dr Phillip Goloub was established concerning the synergy of LIDAR with unmanned aerial vehicles operation for environmental monitoring was discussed.