

**MAC Europe 91: Evaluation of AVIRIS,  
GER Imaging Spectrometry Data for the Land Application  
Testsite Oberpfaffenhofen.**

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During the MAC Europe 91 Campaign the area of Oberpfaffenhofen including the land application testsite Oberpfaffenhofen was flown by the AVIRIS imaging spectrometer, the GER II imaging spectrometer (63 band scanner), and two SAR systems (NASA/JPL AIRSAR and DLR E-SAR).

In parallel to the overflights ground spectrometry (ASD, IRIS M IV) and atmospheric measurements were carried out in order to provide data for optical sensor calibration.

Ground spectrometry measurements were carried out in the runway area of the DLR research center Oberpfaffenhofen. This area was used as well during the GER II European flight campaign EISAC 89 (ref 1,3) as a calibration target (ref 2).

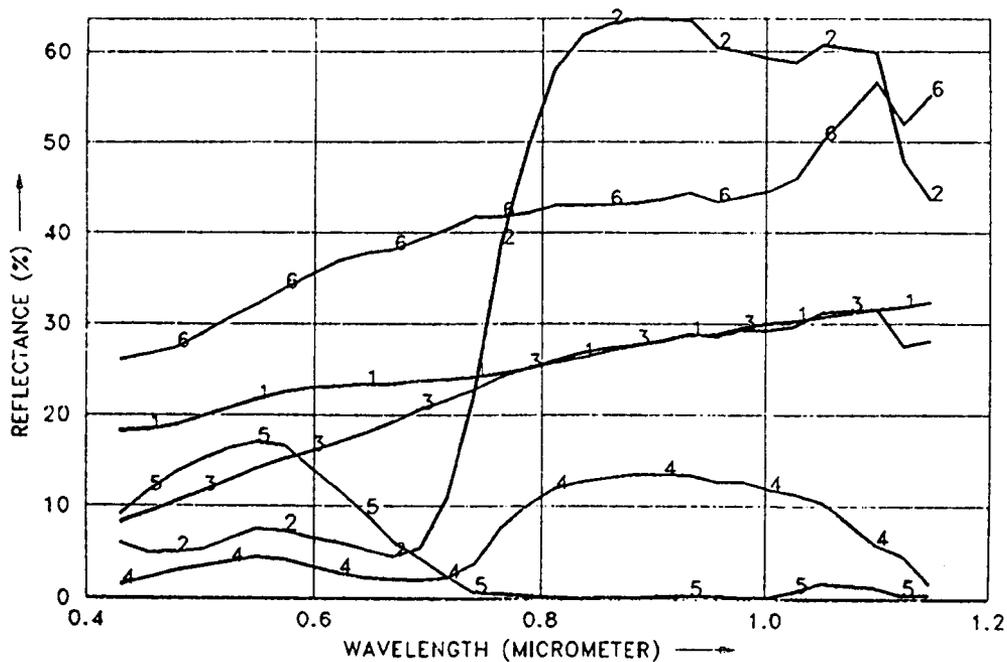
The land application testsite Oberpfaffenhofen is located 3 km north of the DLR research center. During the MAC Europe 91 Campaign a ground survey was carried out for documentation in the ground information data base (vegetation type, vegetation geometry, soil type, soil moisture). Crop stands analysed were corn, barley and rape.

The DLR runway area and the land application testsite Oberpfaffenhofen were flown with the AVIRIS on July 29 and with the GER II on July 12, 23 and Sept. 3.

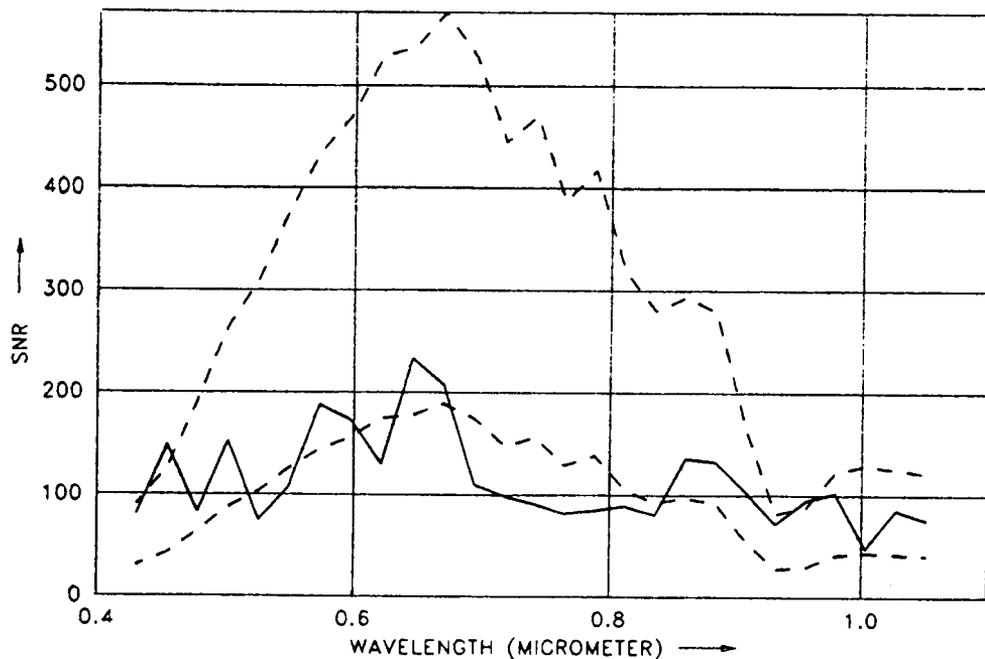
AVIRIS and GER II scenes have been processed and atmospherically corrected for optical data analysis and integrated analysis of optical and radar data.

For the AVIRIS and the GER II scenes SNR estimates have been calculated (ref 4,5,6). Fig. 1 gives an example of the reflectance of 6 calibration targets inside a GER II scene of Oberpfaffenhofen. SNR values for the GER II for a medium albedo target are given in Fig. 2.

The integrated analysis for the optical and radar data has been carried out in cooperation with the DLR Institute for Microwave Technologies.



**Figure 1: GER reflectance spectra of selected targets**  
 1 = concrete airport DLR, 2 = meadow, 3 = bare soil,  
 4 = spruce, 5 = lake, 6 = concrete (AWA).



**Figure 2: SNR values of GER II**  
 Solid line: GER II measurement  
 lower dashed line: scene noise selected to match measurement  
 upper dashed line: scene noise reduced by a factor 3

## References

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