

Written Exam
Introduction to Earth Observation

10 January 2018

No.	Question	Points
1.	Graphically illustrate the development cycle for earth observation services.	2
2.	Discuss the topic of "resource <u>depletion</u> " for the case of oil.	4
3.	Discuss the phenomenon of atmospheric absorption? Name three atmospheric constituents that are very effective absorbers. What are atmospheric windows? How do these relate to the typical wavelengths regions used in earth observation?	6
4.	Give an account of the beginnings of the era of modern earth observation (first high altitude airplane flights, first satellites). <i>1957/58 → Meteorologie</i>	4
5.	Discuss the spatial resolution of satellite imaging sensors by (i) explaining the theory and listing of limiting factors, and (ii) showing the trend in spatial resolution with reference to some exemplary sensors. <i>Graphic / numbers of sp res over the years</i>	6
6.	Space agencies and other satellite operators typically deliver so called "Level 1" data. <i>→ physical (sp)</i> What are these Level 1 data. Give examples for possible Level 1 products for all kinds of EO sensors (physical quantities, units), and describe the steps necessary to arrive at these Level 1 data products. <i>→ procedure / sampling</i>	8
7.	What are the basic ideas behind a technique known as "data assimilation"?	4
8.	The commercialisation of space is in full swing. Which types of space services and applications are increasingly being offered by private companies?	4
Total Number of Points		38

Assessment Scheme

Sehr Gut	≥ 85 %
Gut	≥ 70 %
Befriedigend	≥ 55 %
Genügend	≥ 40 %
Nicht Genügend	< 40 %