**Actual ET of Hupsel – step 1  
Answer sheet**

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| Student (name) |  |

## 1. Characterize weather conditions

In the table below describe the weather conditions in the 3-week period in broad terms. Insert graphs of some of the variables, and describe in words the variation that you observe (keep it concise).

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| --- | --- | --- |
| **Variable** | **Graph** | **Description** |
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Based on your analysis above, try to identify a number of periods of similar weather and concisely describe them. Indicate them with the start and end day (day in May 2014). The number of rows in the table is arbitrary

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| --- | --- | --- |
| **Start** | **End** | **Characterize in words** |
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## 2. Complete the functions

The main work needs to be done in the notebook. In the table below you can briefly document your progress (did it work at once, or after some iterations, what were the hurdles)

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| **Function** | **Progress** | | |
|  | **OK at once** | **OK some tries** | **Challenges** |
| f\_Lv(T) |  |  |  |
| f \_esat(T) |  |  |  |
| f\_s(T) |  |  |  |
| f\_gamma(T,p,q) |  |  |  |
| f\_makkink(Kin,T,p,q) |  |  |  |

## 3. Reference evapotranspiration

Include your values below and/or include a graph that shows the time series of reference ET.

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## 4. Actual evapotranspiration

Include your values below and/or include a graph that shows the time series of actual ET.

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## 5. Comparing actual ET and reference ET

How do actual and reference evapotranspiration compare? Are they identical, is there a fixed offset, or is the difference variable over time. If so, can you related those differences to specific conditions? Discuss values, possibly show a graph.

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## 6. Crop factors and reference evapotranspiration

What is the overall magnitude the crop factor? Is the crop factor constant over time, and if not, can you explain the variations (or at least bring forward a hypothesis)?

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| --- | --- |
| **Site** | **Comment** |
| **Typical values** |  |
| **Variability** |  |
| **What determines the variabililty** |  |

Summarize your findings regarding the crop factor for grass in such a way that you could use it as simple model to derive grass evapotranspiration from the reference ET, based on a limited number of variables (e.g. rainfall history, air humidity, temperature). There is no need to come with a model in the form of an equation, a look-up table is sufficient.

In the table below, indicate a few conditions: give the typical value for the ‘crop factor’ for grass, and the variables that characterize that condition (e.g. when no rain and high temperatures -> crop factor = ...). It is up to you to see how many conditions you distinguish (i.e. how many rows you fill) and how many variables you need to describe a given condition (how many columns you need).

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| --- | --- | --- | --- |
| **Crop factor** | **Variable: ...** | **Variable: ...** | **Variable: ...** |
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