# Sample Questions

**Question templates using spatial facets [Kohn et al(2021)]**

* **Object - Location/Footprint**
  + Where is the 'Bangs' gauging station located within the catchment area? [What are the coordinates]
  + Where are the gauging stations located within the catchment areas (three catchments) for maximum annual precipitation in 2015?
  + What are the five largest catchment areas in this dataset?
* **Object – Boundary**
  + Which catchments share a boundary with the catchment that recorded the highest total precipitation between 2012 and 2015 (inclusive), and what are their boundaries?
  + What are the names of the gauging stations whose catchment areas share a boundary with the catchment of the 'Garsella' gauging station?
* **Object - Spatial Properties**
  + What is the surface area of the largest catchment in the dataset?
  + What is the average annual precipitation in Catchment 1 during the period from 2012 to 2015, inclusive?
  + What are the average annual flow rates at Gauging Station 1 for each year from 2012 to 2015, inclusive?
  + What is the elevation of the 'Beschling' gauging station?
  + What is the highest average monthly evaporation recorded at any catchment between 2000 and 2009 (inclusive), and what is the name of the associated gauging station?
  + What is the all-time minimum and maximum river flow observed at the 'Schwarzach' gauging station?
  + What are the all-time minimum and maximum river flow observed at all the gauging stations?
  + How many annual average frost days (defined as days with temperatures below 0°C) were recorded at the 'Bangs' gauging station between 2010 and 2020?
* **Network - Spatial Relationships**
  + What is the spatial relationship between the 'Bangs' and 'Loruens-Aeule' gauging stations in terms of distance and elevation difference?
  + What is the distance between the gauging stations with the highest and lowest elevations in the dataset?
  + What are the elevations of the gauging stations within a 10 km radius of the 'Gisingen' gauging station?

**Context-Specific Questions**

* **General Spatial Analysis of Catchments**
  + Which catchment has the largest area?
  + Which catchment recorded the highest annual precipitation in 2015?
  + What is the average atmospheric temperature at 2 meters above ground level for Catchment 1 during the period from 2010 to 2020?
* **Temporal and Event-Based**
  + Which three months experienced the highest precipitation in Austria in 2012?
  + In which years did 'OberaBuers (Bruecke L82)' experience the highest number of days with minor flooding, defined as days when river flow exceeded 5 m³/s?? [this question makes much sense if data is available as water level, but in this data set it is not available.]
  + During which five years did the 'Buers (Bruecke L82)' gauging station record the highest number of flood events, based on the assumption that flood events occur when the river flow exceeds 5 m³/s # # in here it is assumed that when the flow is above 5 m3/s then flood events occur. This is incorrect. It should be connected to the water level. However, it is not available in this dataset.
* **Specific to Gauging Stations**
  + What is the elevation of the gauging station that recorded the lowest average river flow during the decade 1990 to 1999?