

# Modelling tourists

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STRC, Monte Verità, May 11, 2023





# Modelling foreign tourists in Switzerland.



Background



Data



Structure of the  
model



Discussion

# 1. Background.



**Trips by non-Swiss tourists:**  
about 2% of total rail demand, but much more on  
touristic lines.



**SIMBA MOBi:** agent-based transport model at SBB

- **Already integrates arrival/departure trips of tourists**
  - Border crossing traffic (rail and road)
  - Traffic generated by airports (rail and road)
- **Mobility of foreign tourists within Switzerland:**
  - For now, no behavioural model

Possible application:  
New hotel.



What happens when a site  
development takes place?

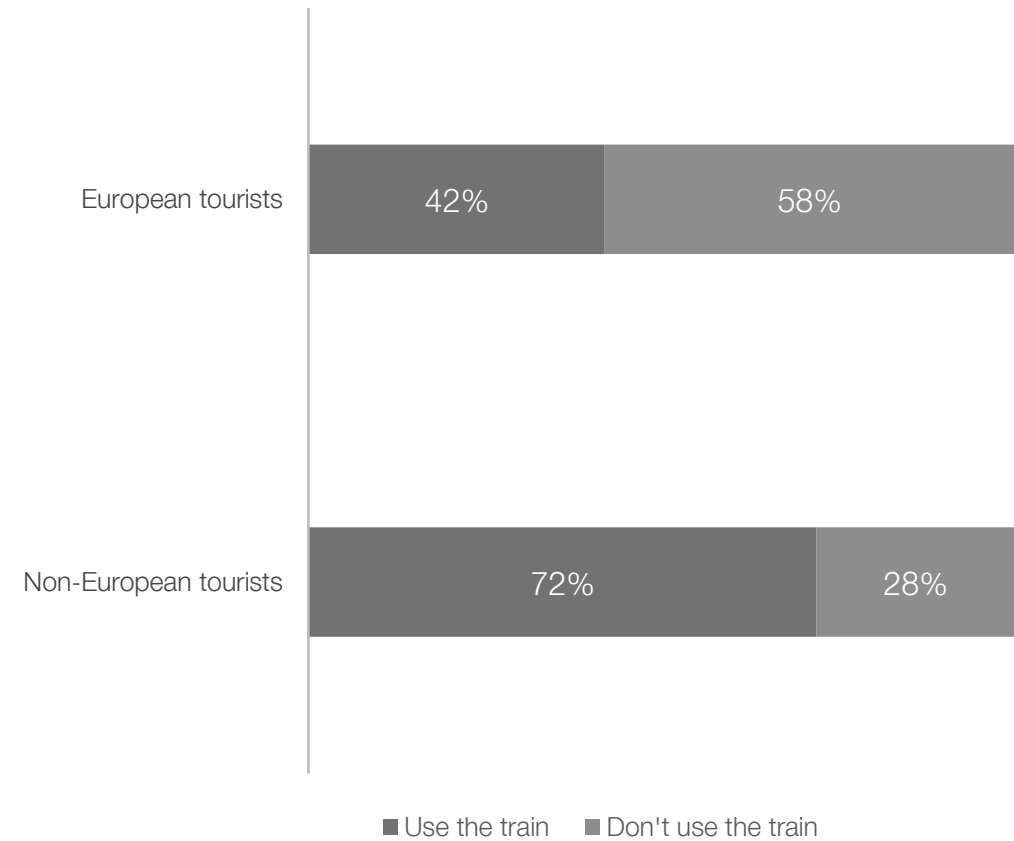
Possible application:  
New hotspot.



What happens when, e.g., a new large museum opens?

# Possible application: Change in the origin country of tourists.

It will change the choice of transport mode.

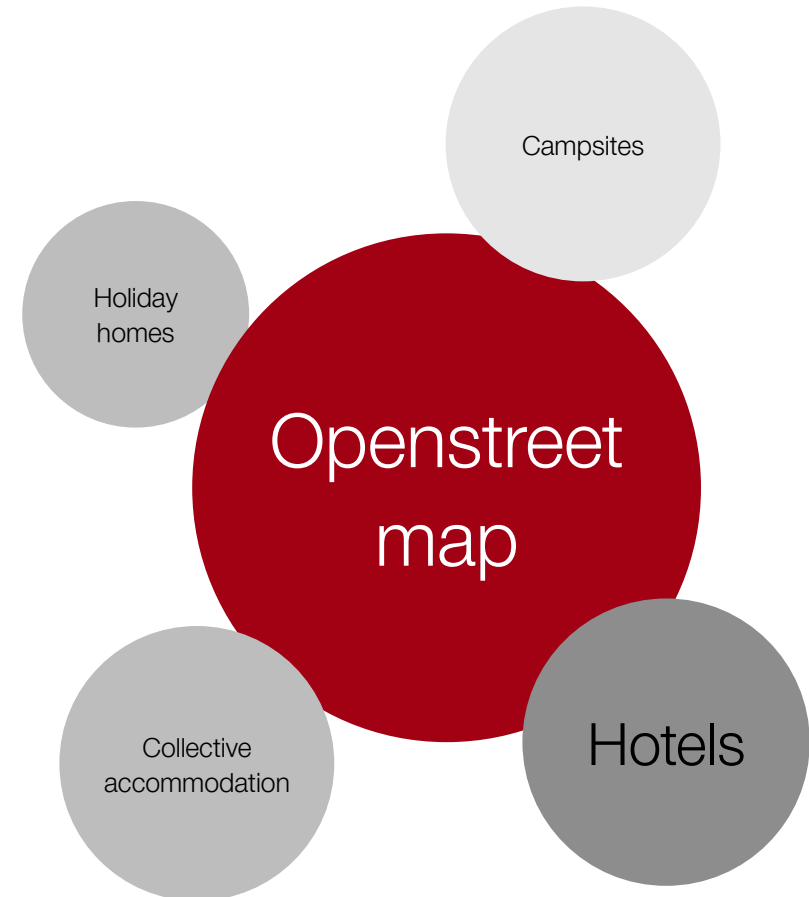
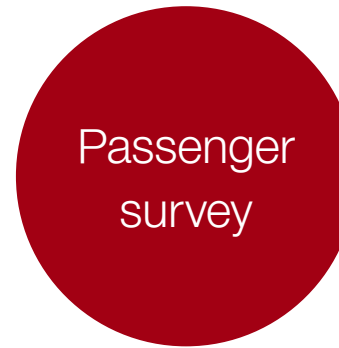
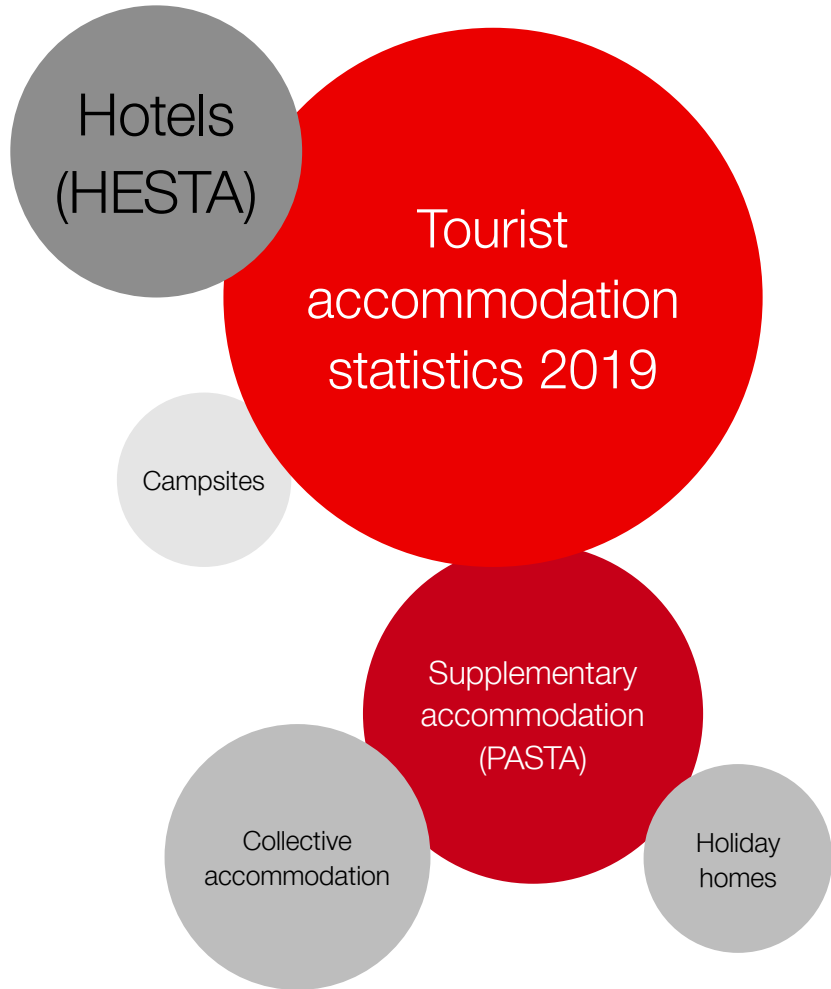


Possible application:  
Impact of tourists in train stations.



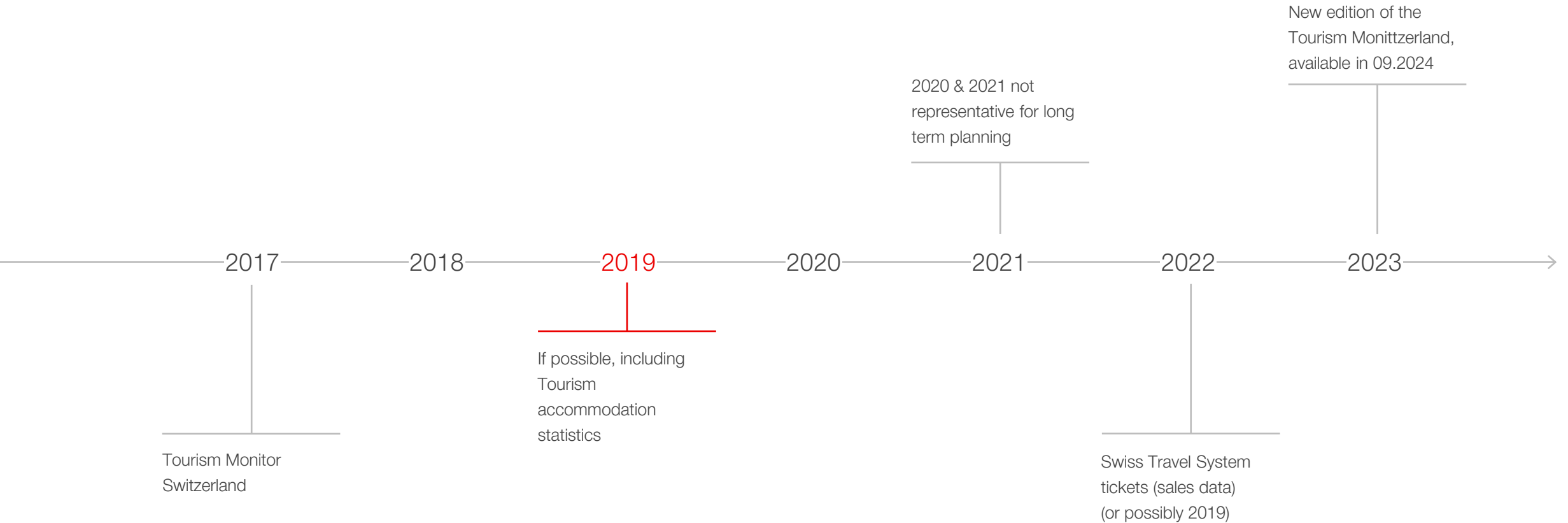
What is the percentage of tourists among visitors?

# Data.





# Year of reference.



# Structure of the model.

## Tourist population

- Distribution of tourists in accommodations
- Available variables:
  - Country of origin
  - Classification of the hotel
  - Localisation

### What is missing:

- Age
- Gender
- Duration of stay

## Public transport subscription

Discrete choice model to be developed

Calibration:  
Distribution of Swiss Travel System tickets in the tourist population by country of origin

## Main transport mode

- Discrete choice model with:
- Country of origin
  - Localisation of accommodation (urban/rural & region)
  - Type of accommodation, classification of the hotel
  - Gender?
  - Age?
  - Duration of stay in accommodation and in Switzerland?

## Calibration & integration in SIMBA MOBi

Activity choice using MOBi Plans

- Attractivity:
  - Number of visitors in hotspots
  - Hypotheses
- Activity duration, departure time:
  - Starting with leisure behaviour of the Swiss resident population
  - Then adjustments?

### What is missing:

- Distance distribution

Calibration: Passenger survey data

# Tourist population.

Number of overnight stays (FSO)

- By commune (if 3+ hotels in the commune)
- By region/canton

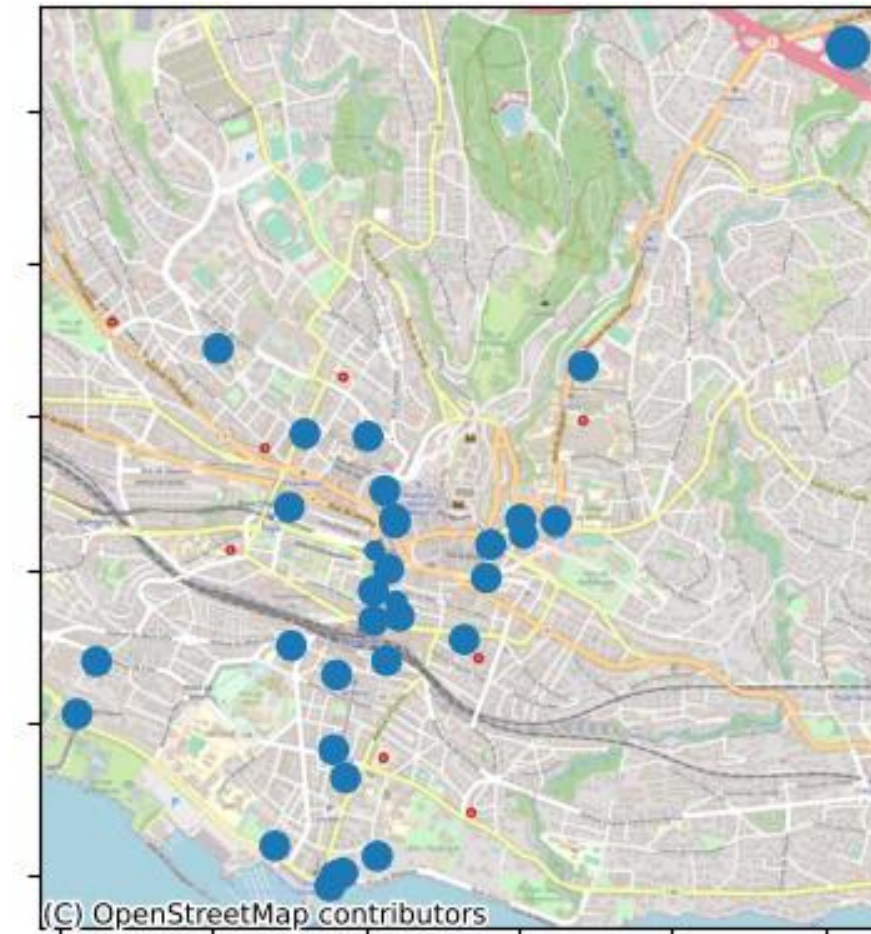


Number of hotels and other accommodations (OSM)  
including (partially) capacity/number of beds

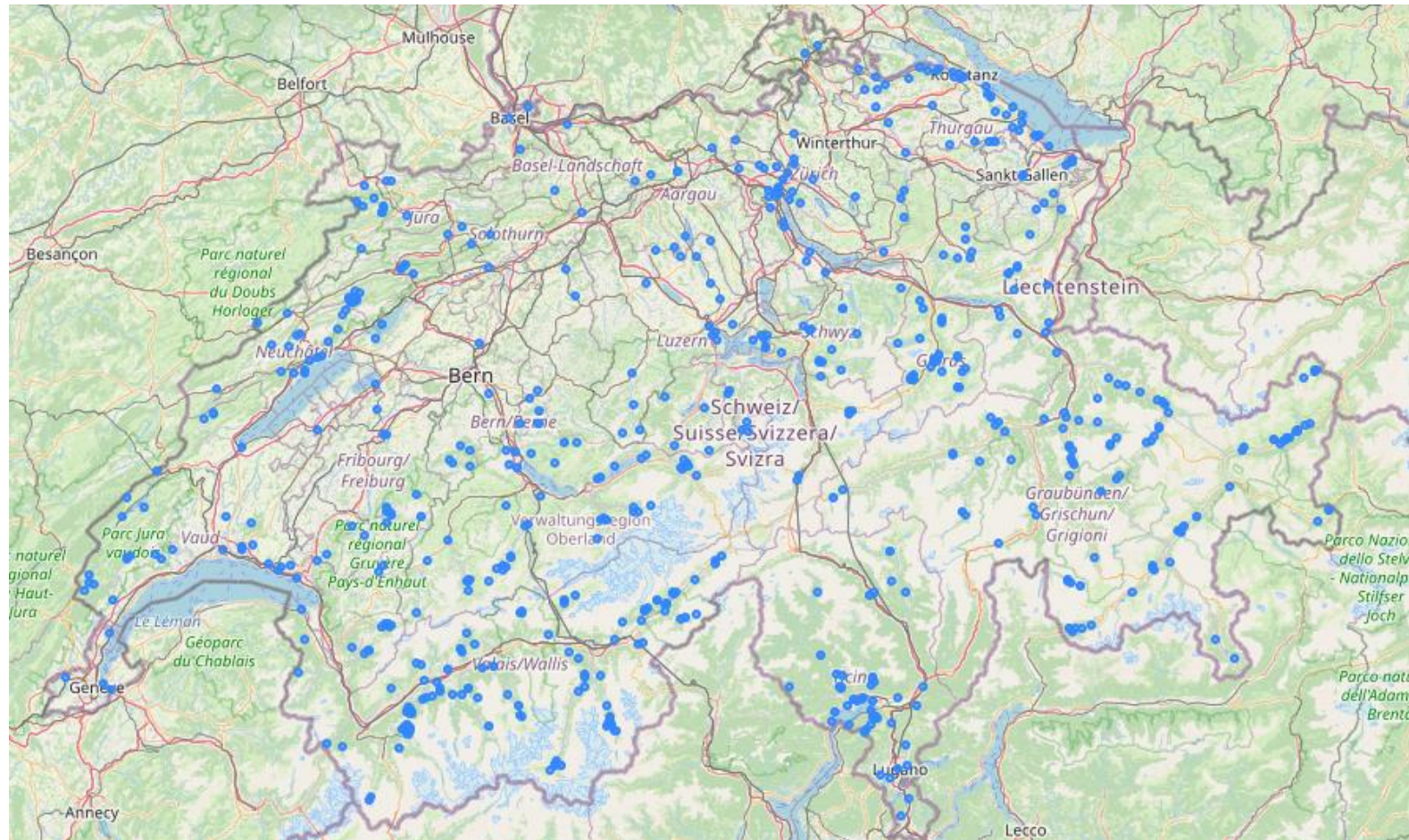




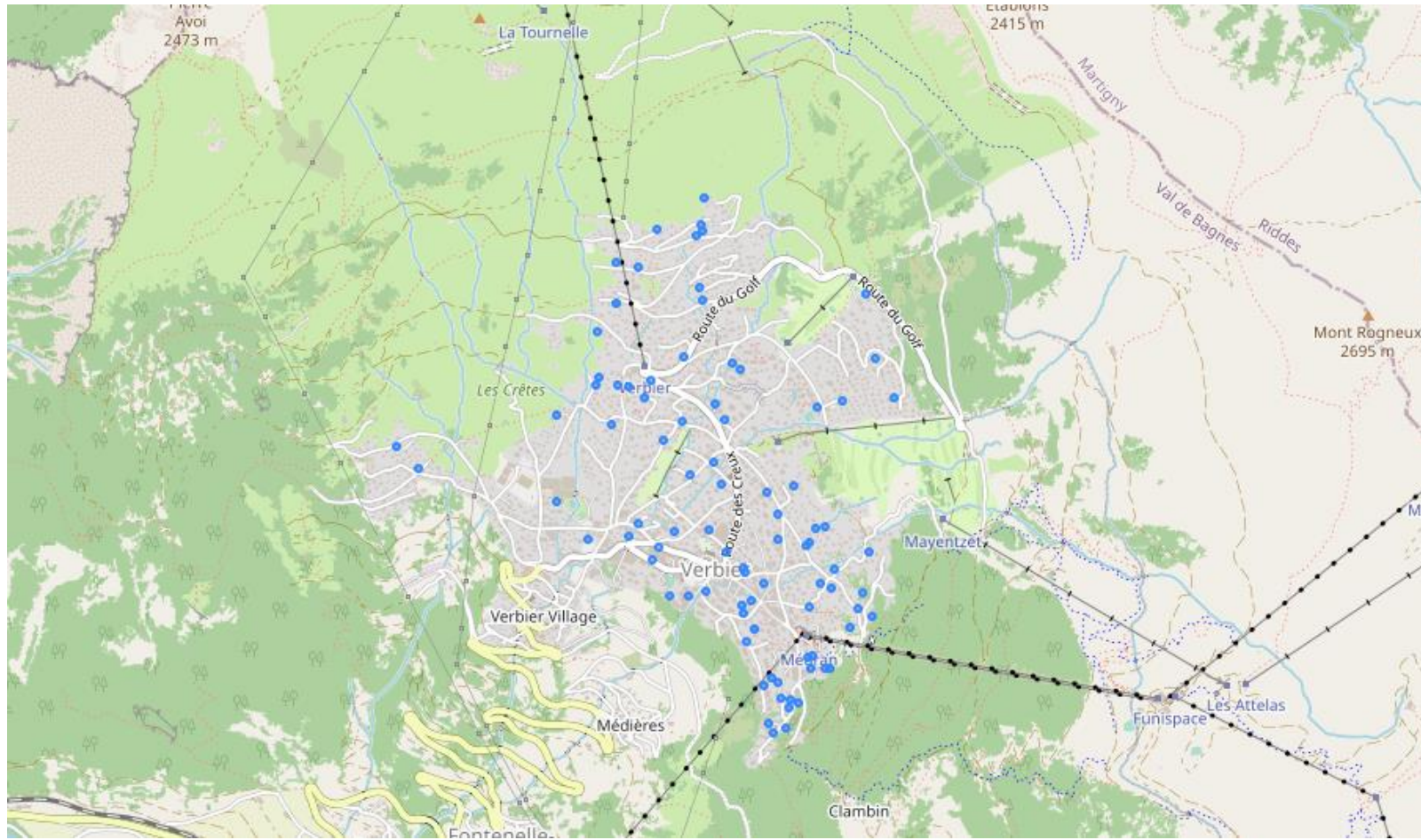
# Hotels in Lausanne from Openstreetmap, including size.



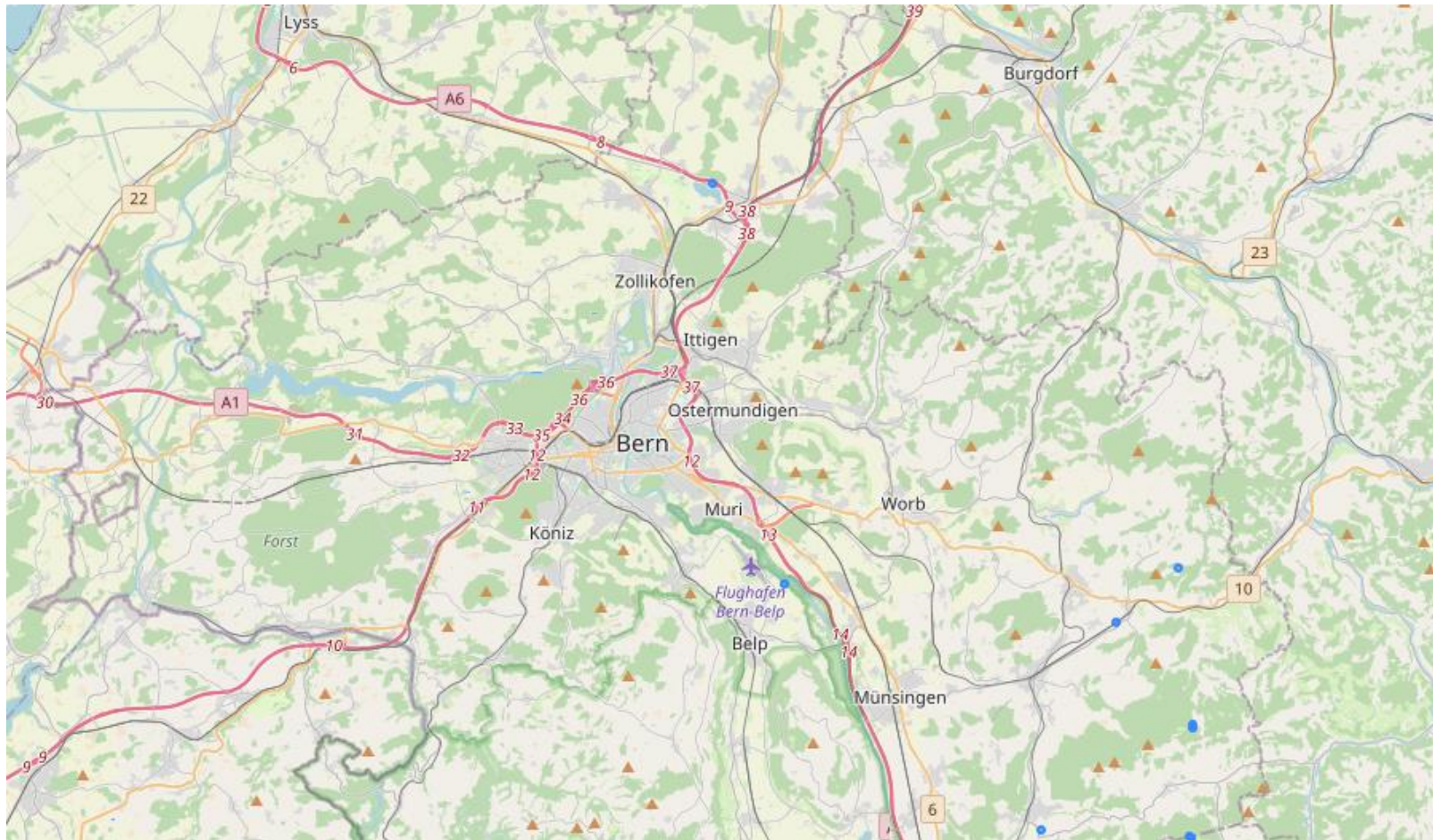
# Holiday homes in Switzerland from Openstreetmap.



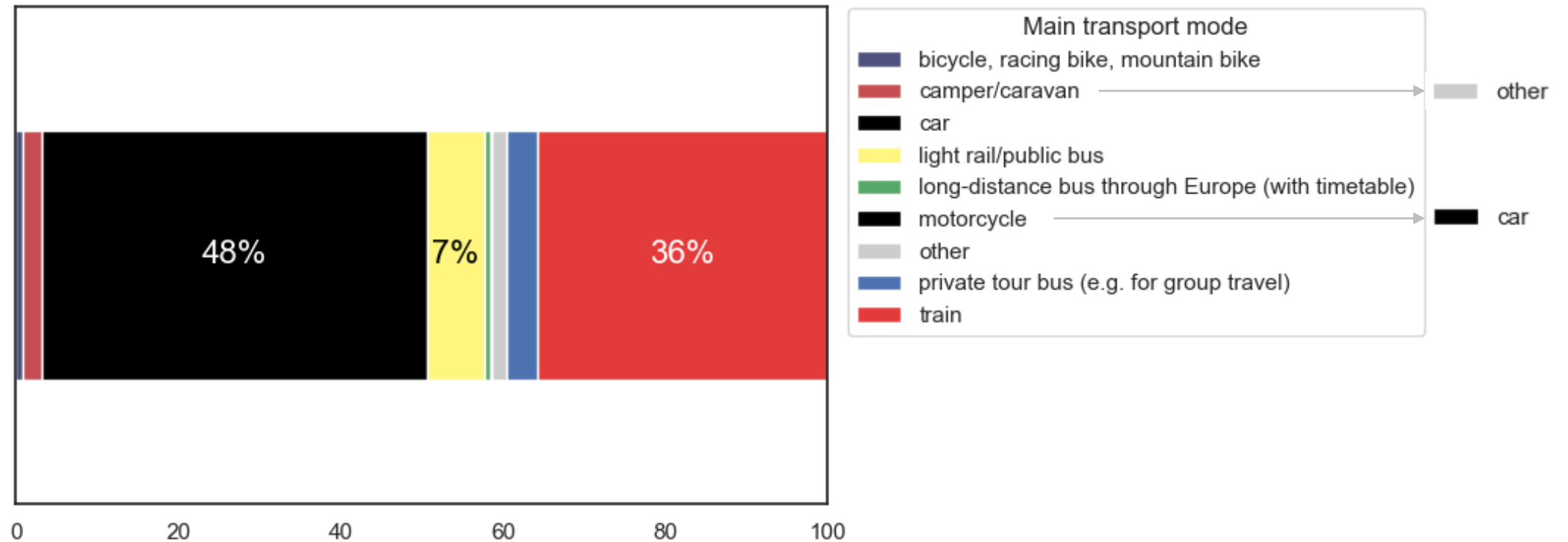
# Holiday homes in Verbier from Openstreetmap.



# Holiday homes in Bern from Openstreetmap.



# Main transport mode in Switzerland.





## Choice of **train** as main transport mode influenced by ...

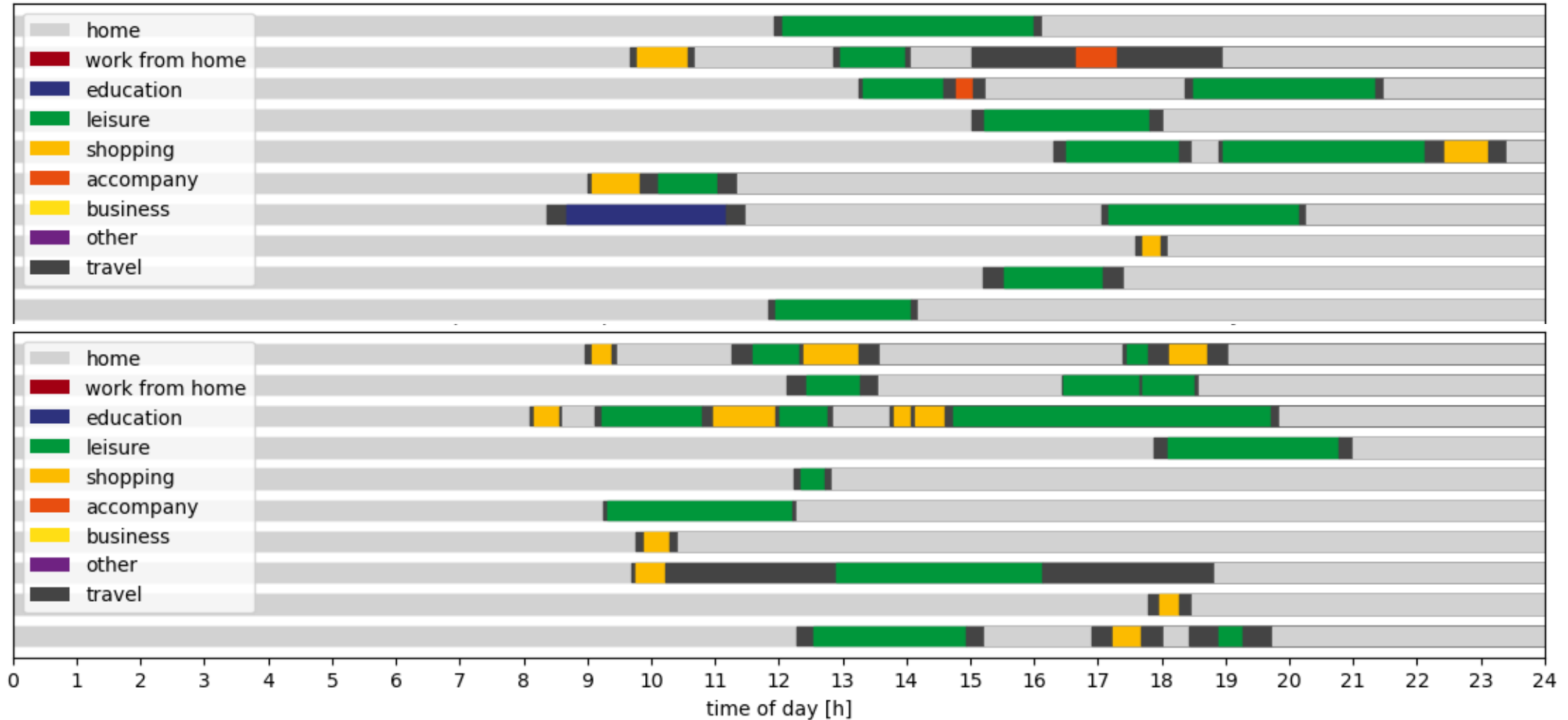


- Country of residence:  
UK, America, Australasia, Asia
- Region where the accommodation is: Staying in Berner Oberland



- Country of residence:  
Continental Europe
- Type of accommodation:  
Campsites, more stars in hotels
- Urban-rural typology of commune of accommodation:  
Staying in rural areas

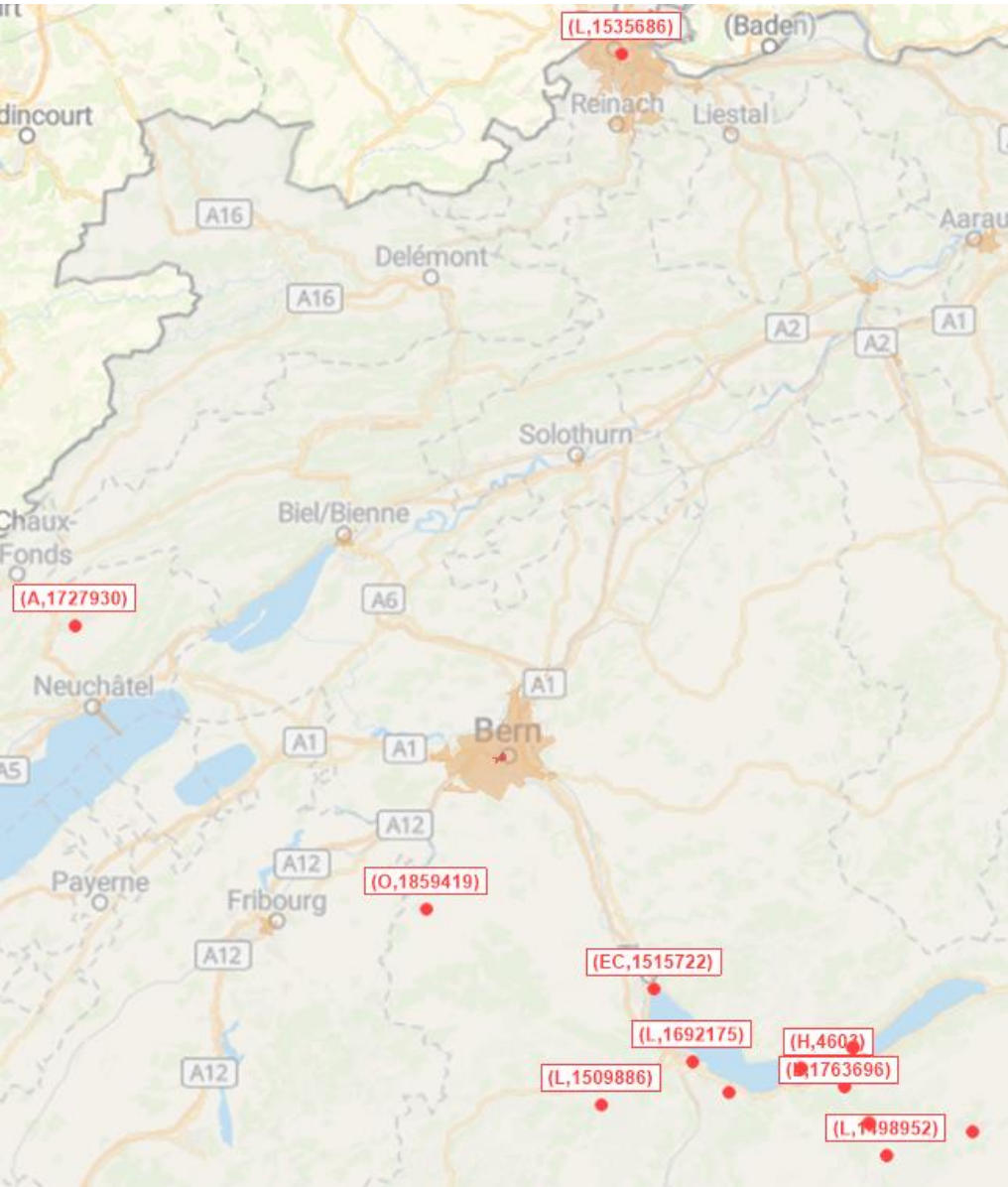
# Activity plans: 20 «tourists» in Interlaken.

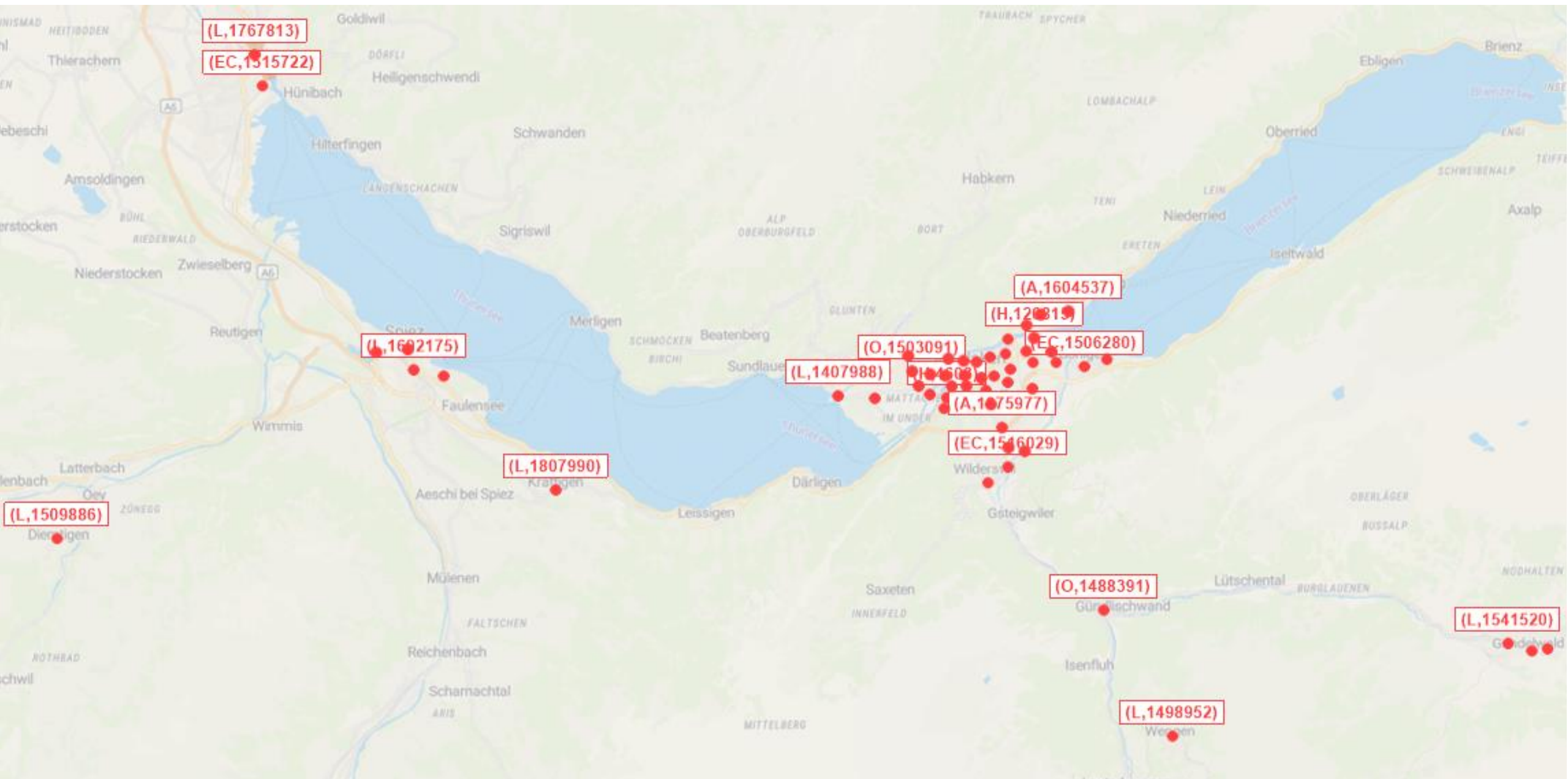




# Destination choice.

1000 «Tourists» in Interlaken.





A close-up photograph of a person's hand holding a red reusable coffee cup with a matching lid. The cup is resting on a grey tray table. The background shows the interior of a train, with window blinds and a person's profile visible on the left. The text "Danke, merci & grazie." is overlaid in white on the image.

Danke, merci  
& grazie.