

**Main objective:** Geometrical and statistical analysis of the StorMe inventory of the Ticino canton, Switzerland.

## I. Study Area and available data

- StorMe: rockfalls, debris flows, floods, landslides and avalanches (1633, 1990-2020)
- 8% with mapped movements
- Topography, climate & geology
- Database: 3679 entries; 821 points, 2923 polygons

## II. Data preprocessing

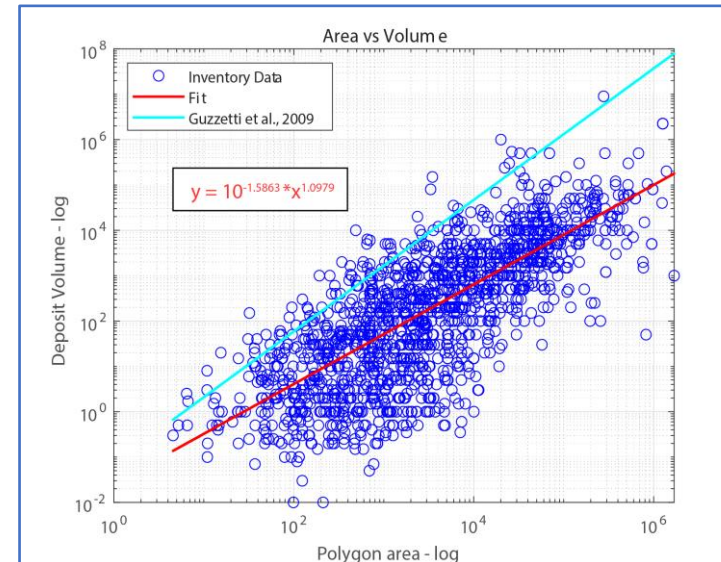
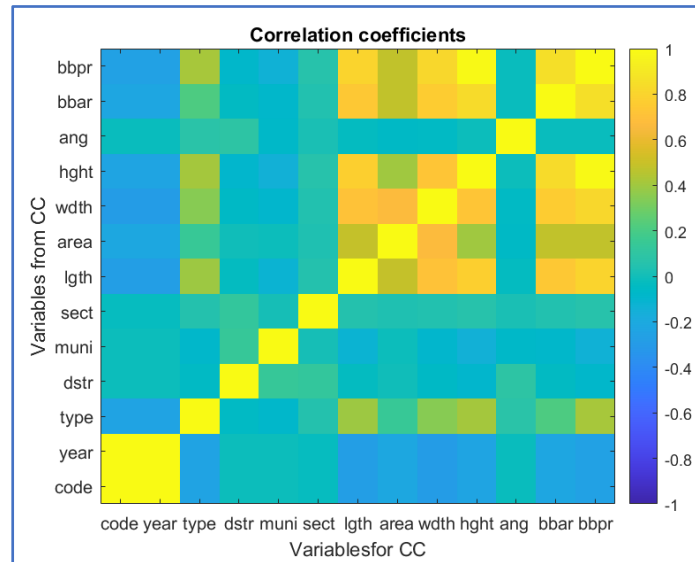
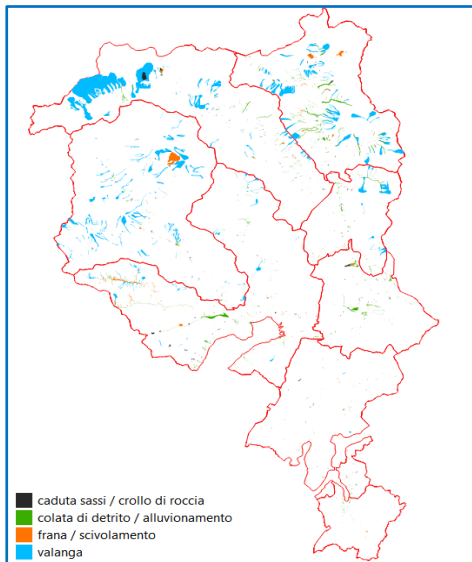
- Compilation, geodata & bibliography (boundaries, terrain, geology, hydrography, land use)
- Fix geometries, queries, join attributes
- Terrain & geometrical analysis

## III. Methodology-Workflow

- 1765 entries
- Univariate & bivariate analysis
- PCA
- Specific relations (i.e., power law)

## IV. Statistical analysis – Results

- 38% rockfalls, 32% debris flows, 16% landslides and 14% avalanches
- Representative from 1990's
- Maximum in 2002 (123 events)
- Most affected district is Blenio (380)
- Mean slope is 31.5°
- Mean angle of reach is 33°



## V. What's Next ?

- Specific analysis (movement type)
- Machine learning: main controlling factors

Thank you for your attention!