AN EXTENDED HOMOGENEOUS QUICK-LOOK TSUNAMI CATALOGUE FOR THE EUROPEAN-MEDITERRANEAN REGION

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The tsunami catalogue in the European and Mediterranean region has been systematically revised since the beginning of 1990's through several research initiatives, mainly the EU projects

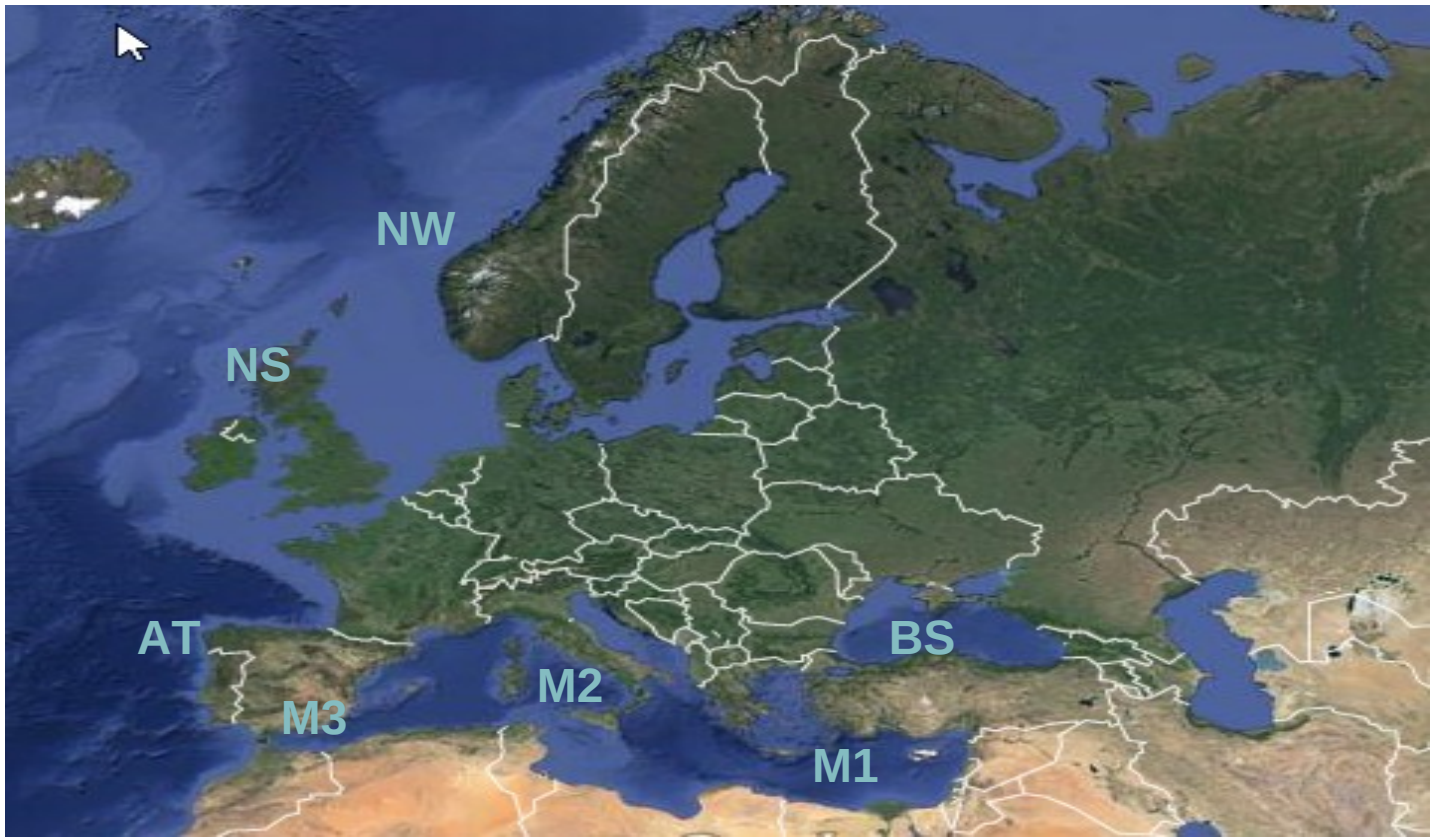
- GITEC
- GITEC-TWO
- TRANSFER

and with the contribution of many scientists from several institutes.

Currently the EUFP7 ASTARTE tsunami research project is on going in this field.

The region of research in this study

Following previous EU projects we consider the following subregions:



M1, M2, M3*= Mediterranean Sea, including Gulf of Cadiz ,* ***BS****= Black Sea ,*
AT= *Atlantic,* ***NS****= North Sea ,* ***NW*** *=Norway*

The research is still on going because:

- New historical tsunami events are revealed
- Event parameters are revised by new techniques

In order to promote information useful for tsunami hazard and risk assessment, there is a need to **compile a new tsunami catalogue**, as much as:

- *Complete*
- *Homogeneous*
- *Accurate*

1. New historical events were added

In the Mediterranean and associated seas (Marmara Sea, Black Sea, Azov Sea, SW Iberia)

Also in the NE Atlantic and the North Sea

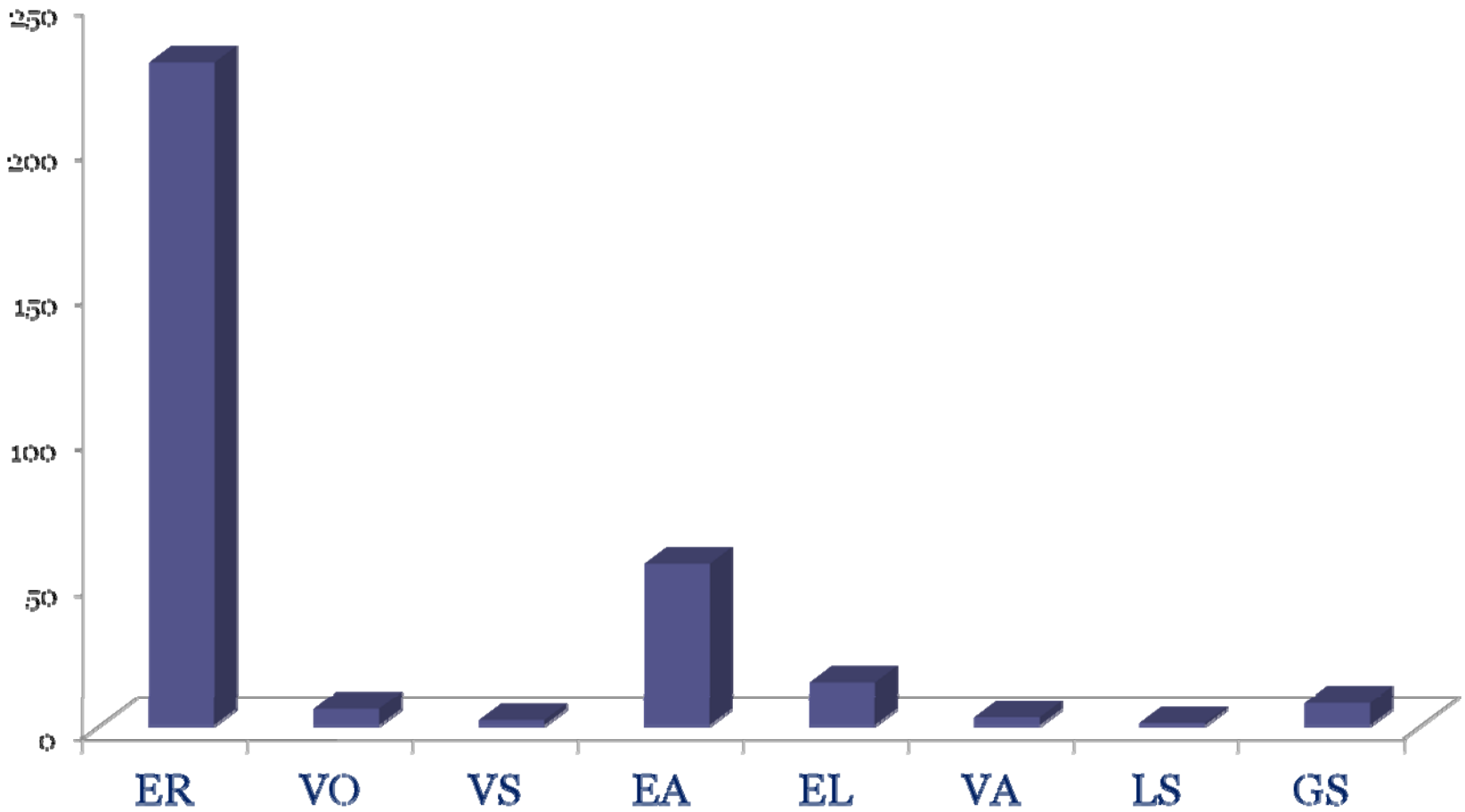
2. Assignment of intensities

For each tsunami event, applying the 12-point Papadopoulos- Imamura (2001) Intensity scale, for reasons of homogeneity and accuracy.

An example of the new quick-look Tsunami catalogue

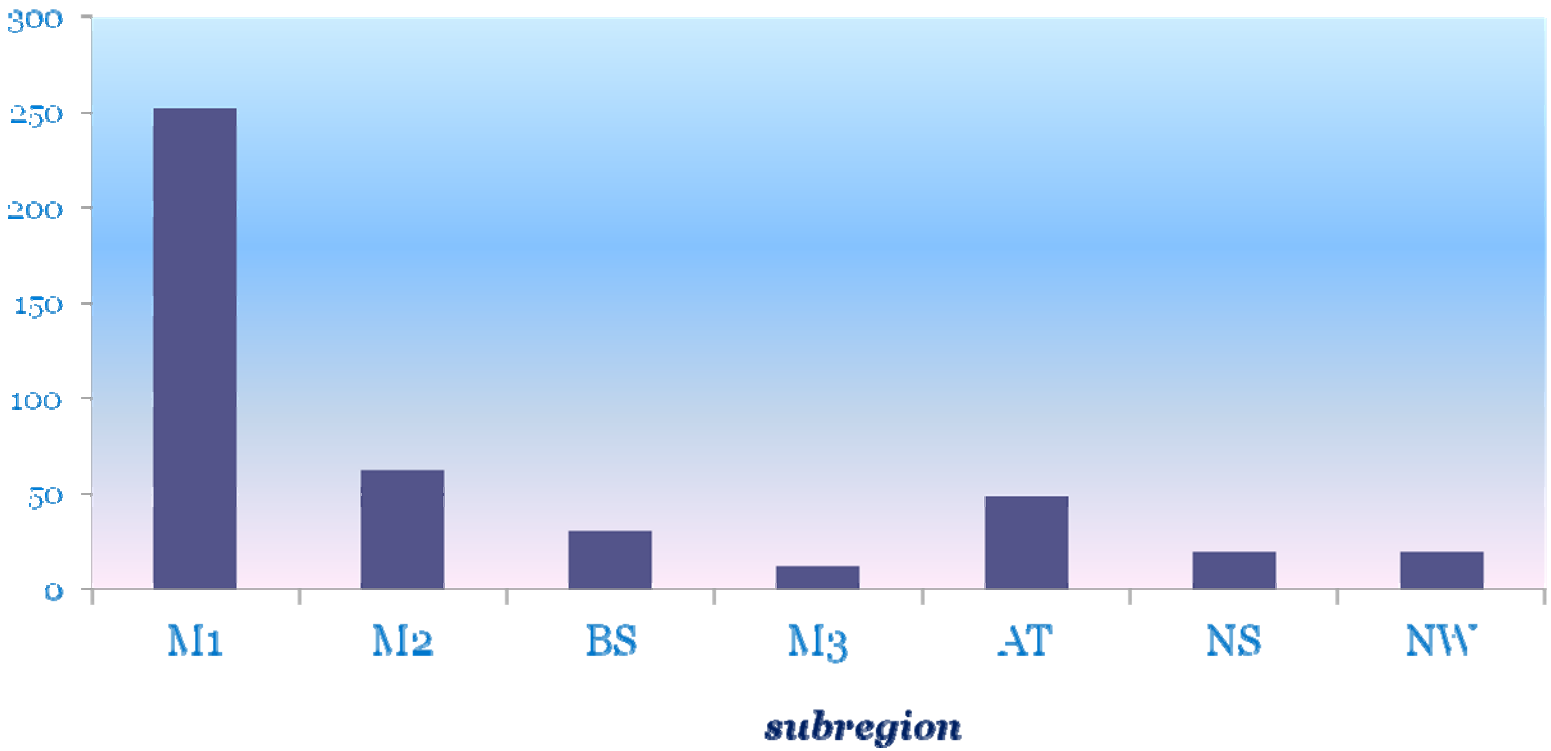
ID	Year	Month	Day	Lat	Long	Intensity k	Intensity K	Source Region	Source type	Magnitude	Intensity	Source Subregion	localities of observation	reliability
1	365	7	21	35.12	23.12	5	10	M1	ER	8.3 (±0.3)	8+	SW Crete Island	Methoni, Panephysis,Epidavros, Phalasarna, Balos, East Alexandria, Dalmatian coast	4
2	544			43.12	28.18	4-5	9	BS	ER	7.5(±0.5)	9	Bulgarian coast and Saros Bay	Odessus, Dionysopolis and Aphrodisium	4
3	556			37.00	27.36	4	8	M1	ER	7	10	Dodecanese islands	Cos island	3
4	1564	7	20	44.01	7.17	2	3	M2	EA	5.8	8.5	Liguria-Côte d'Azur	Antibes	4
5	1633	11	5	37.43	20.52	3	5	M1	ER	7	9	Zakynthos island, Ionian Sea	Laganas (Zakynthos island)	3
6	1755	11	1	36.42	-9.48	6	9	AT	ER	8.5	11.5	SWIT		4
7	1790	10	9	35.25	0.21	3	5	M3	EA		10	Algeria	Spain- North Africa coasts	3
8	2012	6	10	36.25	28.53		3	M1		Mw=6	7	Plimiri bay (SE Rhodes)	Fethiye	4

Distribution of events per source type

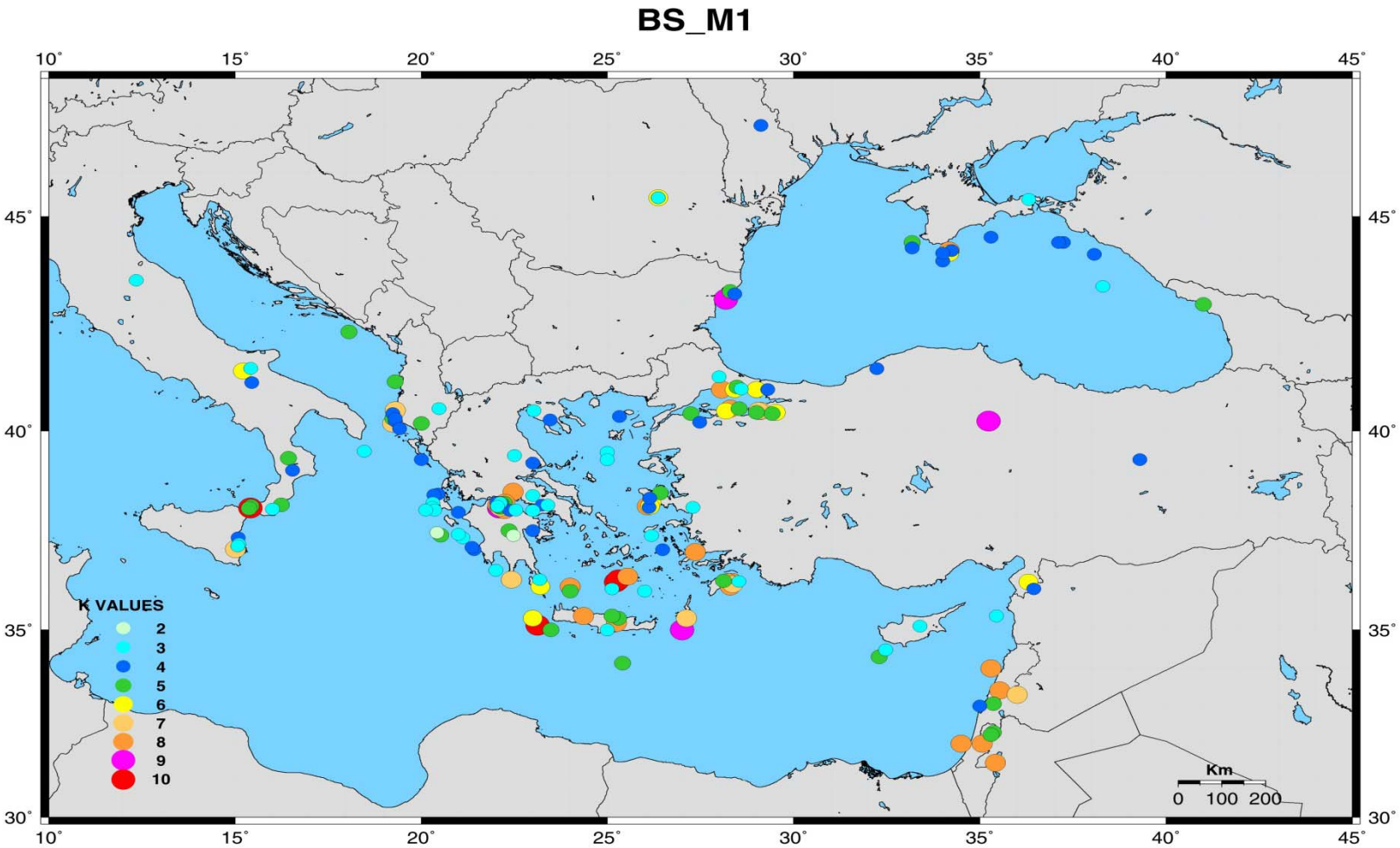


***ER**=submarine earthquake, **VO**= submarine eruption, **VS**=volcanic marine slide, **EA**= earthquake associated , **EL**=landslide earthquake, **VA**=volcano associated, **LS=** aseismic landslide ,**GS**=gravitational marine slide*

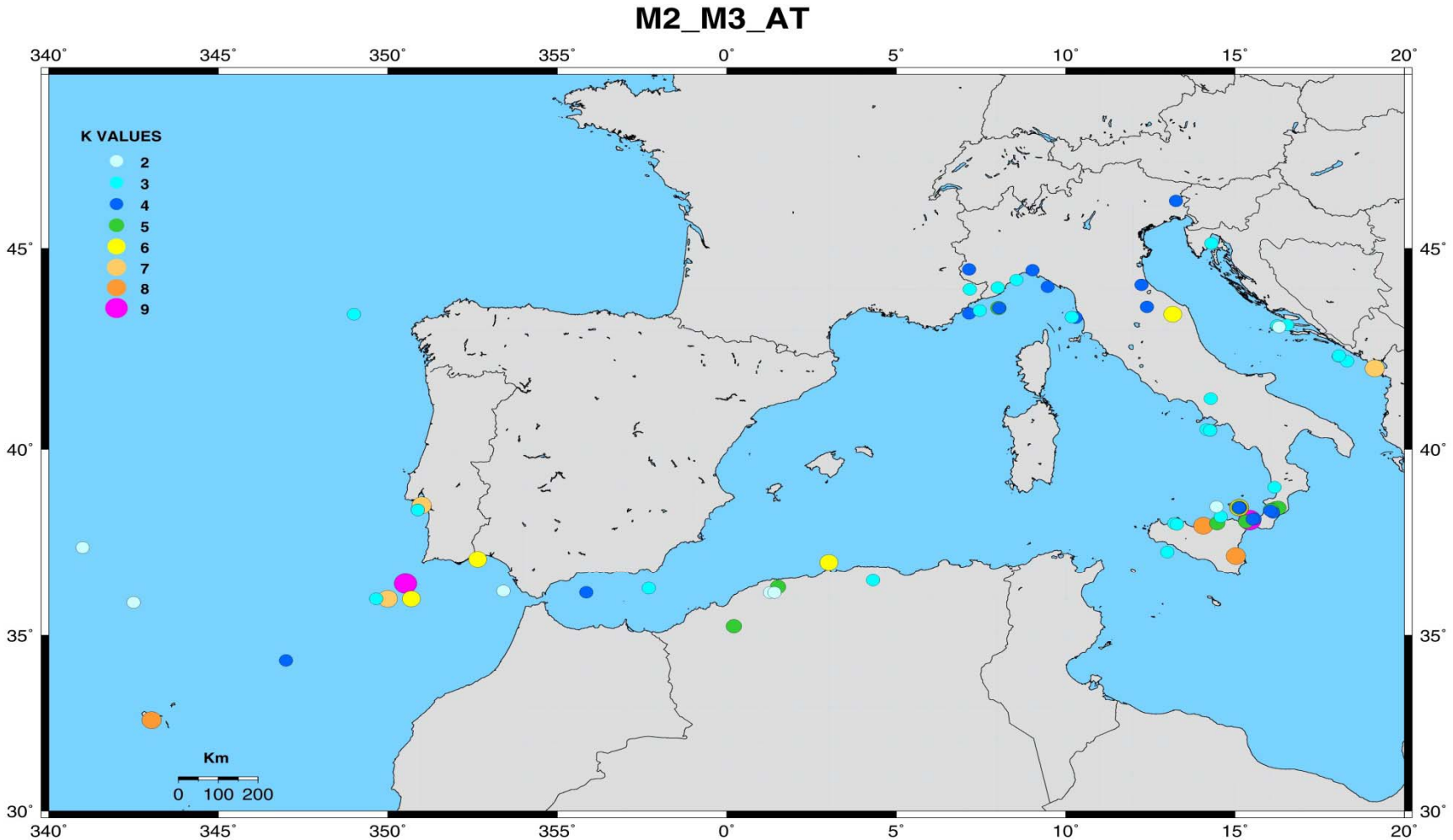
Distribution of tsunamis in the several subregions



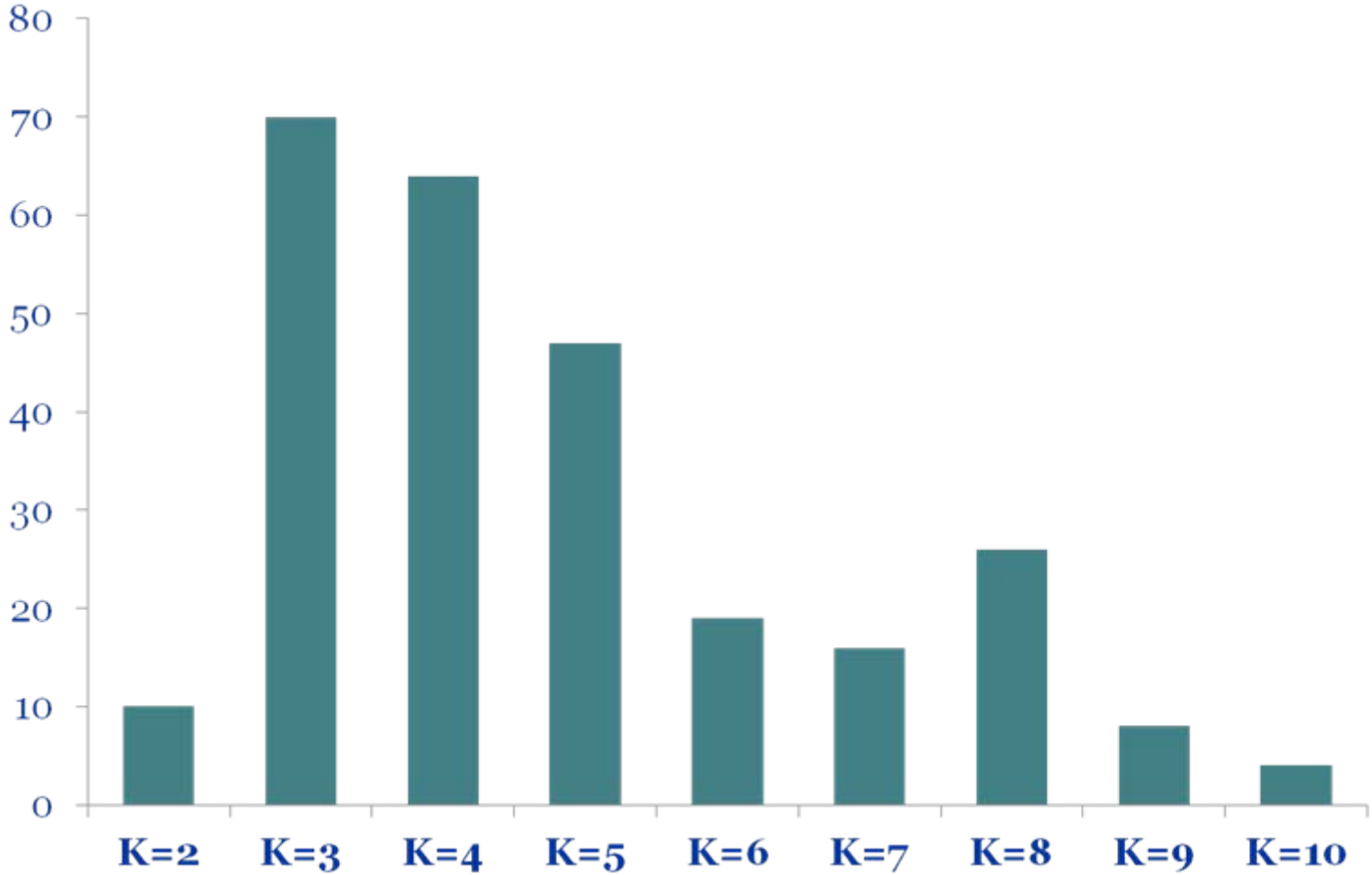
Tsunami sources in Eastern Mediterranean and Black Sea



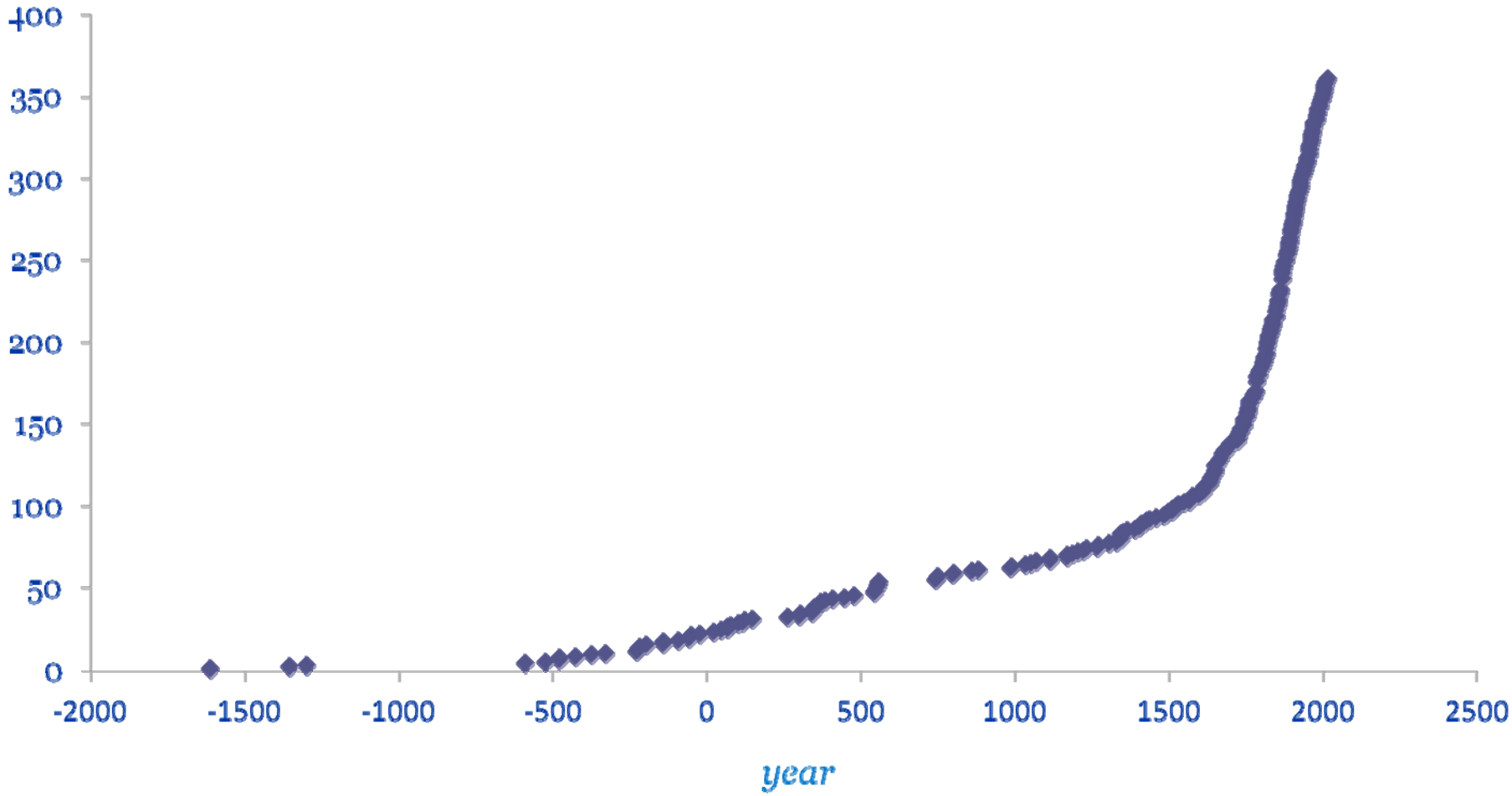
Tsunami sources in Western Mediterranean and SW Iberia



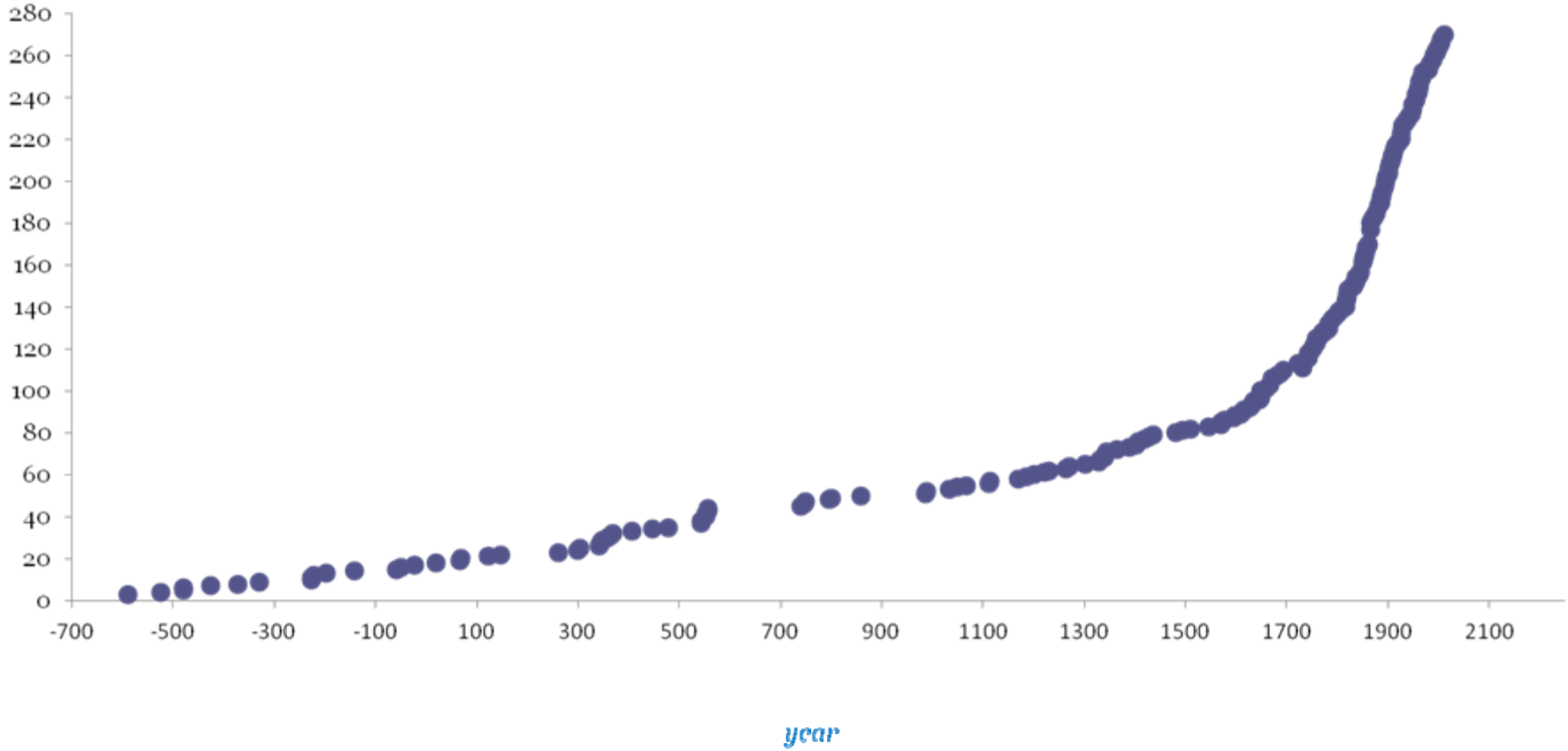
Frequency distribution of tsunami events according to the intensity, K



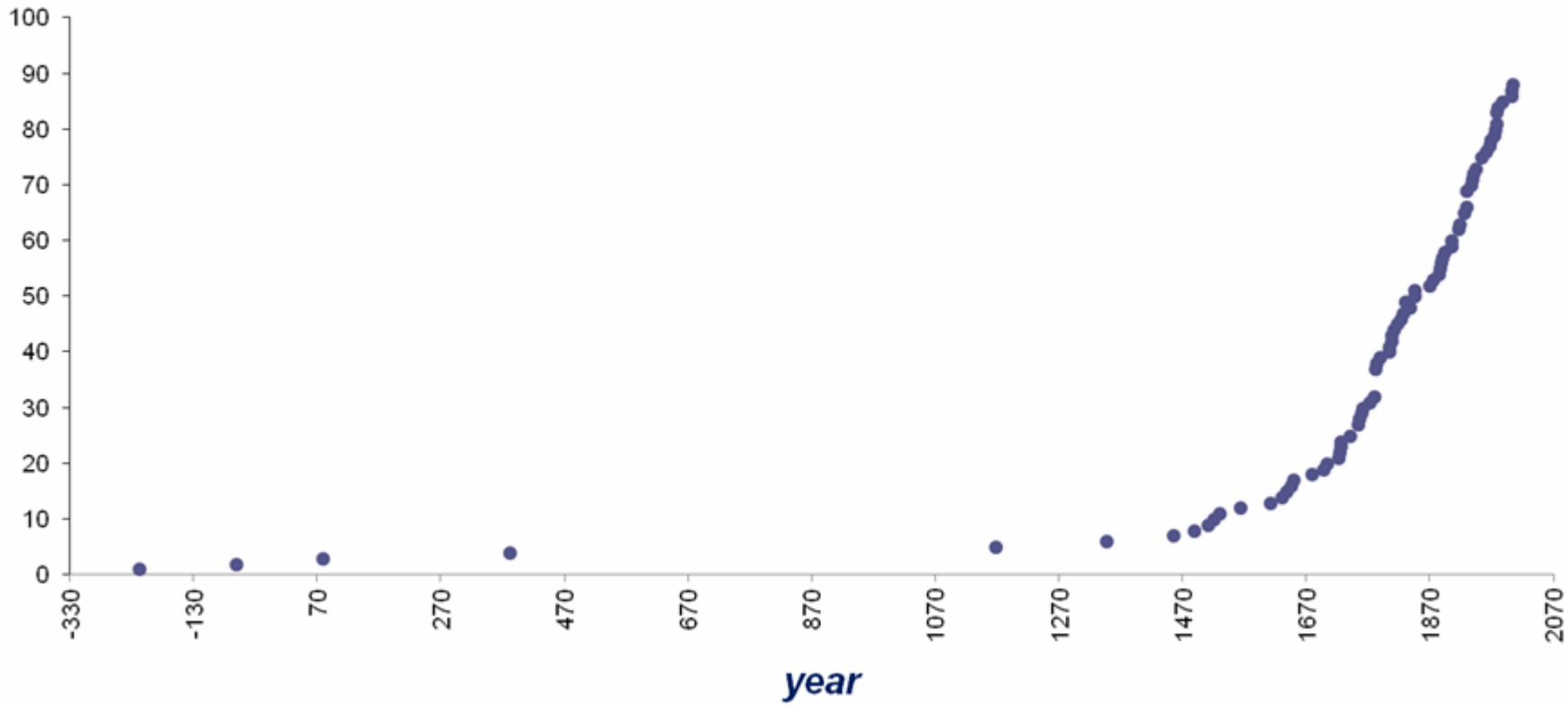
Cumulative number of events (entire region) / time



Cumulative number of events (subregions M1 and BS)/ time



Cumulative number of events (region M2-M3-AT) / time



Results

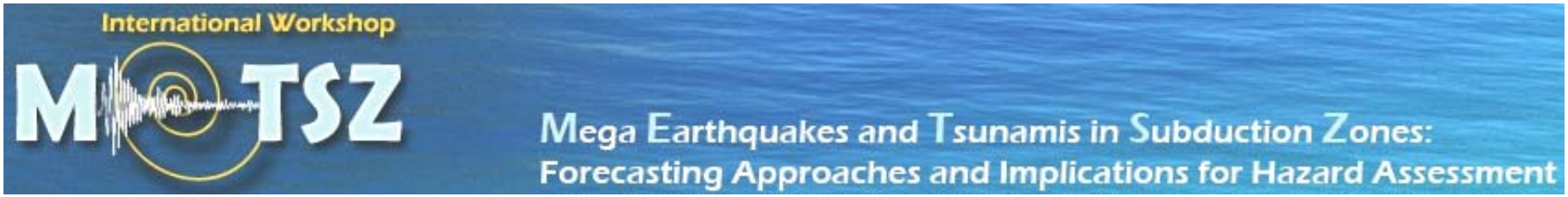
- The new quick-look tsunami catalogue contains 372 events in a homogeneous way as regards parameters such as subregion classification, intensity assignement in 12-point scale, source type, reliability of the event

- Intensity in 12-point scale was assigned to 258 out of 372 events

- The majority of tsunami events were caused by submarine earthquakes but volcanic eruptions and aseismic landslides also contributed
- The Hellenic Arc is the most active in tsunami generation

Results

- The catalogue is vastly incomplete for K<3
- Completeness increases drastically from the 16th century due to historical reasons
- Completeness increases possibly and from the beginning of 20th century, perhaps due to the development of monitoring systems.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Thank you!