

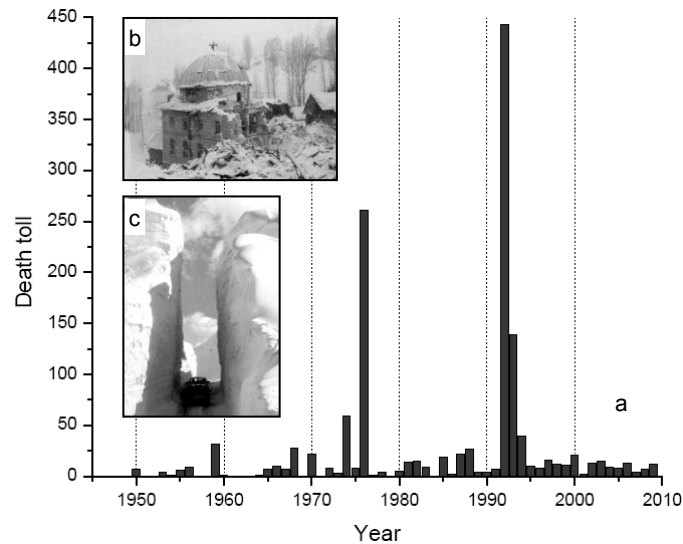
## トルコの雪崩について Avalanches in Turkey

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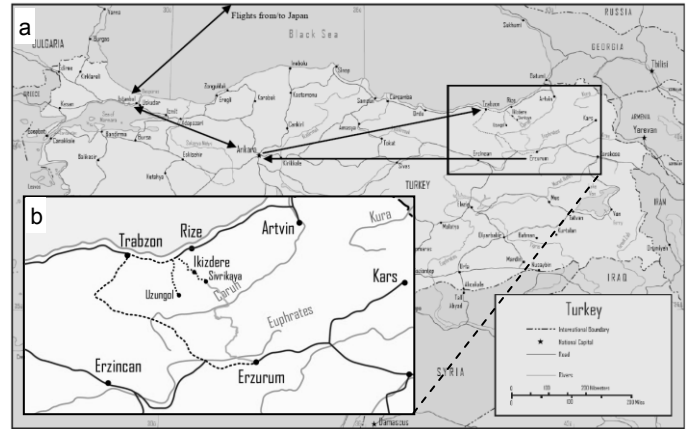
Present report briefly outlines specific issue of snow avalanches in the Turkish republic (with some earthquake and glacier related references) and describes Japan avalanche delegation visit to Turkey, 18-25 March 2009, to Ankara and Eastern Anatolia (Pontus Mts. and Palandoken range) for acquaintance with problems of this avalanche prone area (Fig. 1) and meeting Turkish researchers and decision-makers, engaged into hazard mitigation in the republic, for discussion related to possible technical cooperation between Japanese and Turkish Governments.



**Fig. 1.** (a) Number of people killed by snow avalanches in Turkey, for 1945/46-2008/09 (data were kindly provided by Ö. M. Yavaş, ÇAGEM, Ankara). In total for the period (63 winter seasons) – 1389 people were killed in snow avalanches (about 22 people a year in average); (b) Mosque destroyed by an avalanche; (c) 18-meters thick avalanche debris at the southern part of eastern Anatolia, there largest avalanches in Turkey take place occasionally, near to Iraq-Iran border (archive photos are courtesy of ÇAGEM).

The trip was organized by the Avalanche Research-Development, Reconnaissance & Prevention Branch (or ÇAGEM – in Turkish) belonging to the General Directorate of Disaster Affairs (GDDA), Ankara, Turkey. The objectives of this visit were (1) discuss the potential of a possible technical/scientific cooperation project between Japanese and Turkish governments; (2) ensure field trips to view avalanche conditions and construction practices and challenges in a region of the Eastern Anatolia (Fig. 2,3) comparable

to Japanese heavy snow mountain regions and to the Caucasus; (3) meet with organizations responsible for avalanche and natural hazard research and assessment; and (4) exchange technical information with major avalanche research organization in Turkey (ÇAGEM).



**Fig. 2.** (a) Map of Turkey showing main locations visited by delegation. (b) Field section of the visit – Black Sea region (Trabzon and Rize provinces) and inner part of Eastern Anatolia (Erzurum province), Turkey; dashed line indicates route covered by land transport.



**Fig. 3.** (a) An avalanche track in front of the road D925 going to Ovit pass, not far from the Sivrikaya settlement, Rize province, Turkey. Road is placed at an altitude ~30 m higher than the bottom of the valley; even though the rock wall next to the road can be reached by an avalanche - some trees over it have lots of broken branches; (b) Avalanche tunnel, Sivrikaya settlement.

**Attention:** Full detailed version of this work has recently been released as a Report (1). The intention of presenting this work at the Joint Conference of JSSI&JSSE'09 is to attract attention and facilitate discussions on issues of snow avalanches and glaciers in the Turkish Republic and potential of its collaborative study.

**References:** 1) Podolskiy, E.A. (2009): Japan avalanche delegation visit to the Turkish Republic, 18-25 March 2009. Special Report, Graduate School of Environmental Studies, Nagoya University, Japan, 79 p. [Unpublished; released 16 June 2009]. Available On-line: <http://www.snow-mechanics.com>

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