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Operationalisation of physical vulnerability to natural hazards: Vulnerability curves versus vulnerability indicators

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Physical vulnerability to natural hazards is often presented as a function of the intensity of the process and the degree of loss (vulnerability or fragility curves). However, a considerable amount of studies argue that physical vulnerability assessment should focus on the identification of these variables that influence the vulnerability of an element at risk (vulnerability indicators). In this study, the focus is on the comparison between the two methods and the provision of recommendations for improved operationalisation and assessment of physical vulnerability. The comparison is illustrated through a case study in South Tyrol. The two methods have been applied at the same study area that suffered significant damages due to a debris flow event in 1987. A vulnerability curve has been developed for the buildings that suffered damages, as well as a database including physical vulnerability indicators for the same set of buildings. The comparison of the results highlight the advantages and disadvantages of the two methods showing that they should complement rather than oppose each other.