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On testing of the maximum magnitude based on catalog data

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We discuss what can be learned from catalogue data alone about the maximum magnitude of earthquakes within a region in the context of a doubly truncated Gutenberg Richter law. We consider present day catalogs as well as paleoseismic data. We show that present day catalogs do not allow the estimation of of the maxmimum magnitude with sufficient confidence. The results will be presented in the language of testing and of confidence intervals. This sheds a new light on the parameter M_{max} and its usefulness for hazard estimation.