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Magnitude assessments of historical severe weather events in Lower Austria (1713-1754)

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We will present recently rediscovered data on historical weather events in Lower Austria. We focus on weather depictions in the media of the 18th century. Specifically, we report on severe storms, hail, floods, snowstorms, and avalanches. Our selection illustrates that the data material from this time period is often sparse, but sometimes rich enough for constructing wind magnitude assessments. Based on the damage reports, we will provide estimates of the wind speed. Here, we will focus on reported damages on buildings (e.g., unroofed houses, a blown down church tower) and vegetation (e.g., uprooted trees). Moreover, we will investigate how these natural events impacted on society and what measures were taken as attempts to reduce storm impacts: hail stones as large as chicken eggs, for example, severely damaged vegetable fields and vineyards, snow storms rendered roads impassable and interrupted the daily life of the contemporaries. Interestingly, reported correlations between earthquakes and thunderstorms can be seen as an instance of an Aristotelian storm etiology (i.e. the belief that earthquakes are caused by winds trapped in subterranean caves). One report even mentions at least two dozen fatal victims of a severe flood. The interdisciplinary aims of our paper are located in environmental history and meteorology and are two-fold: (1) We will present a time series of severe weather in Lower Austria, with a special focus on storms. (2) Whenever possible, we will discuss societal impacts from a cultural historical perspective.