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A damage cost estimation from sea-level-extremes in the Baltic Sea Region

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The estimation of costs due to climate change and the identification of possible adaptation measures are of particular interest at coastal regions threatened by sea-level-rise. In terms of cost-benefit-analysis one wants to quantify how efficient adaptation measures are and when their investments are amortized. We study damages due to storm surges in the Baltic Sea Region and estimate cumulative costs. Based on extreme value statistics we deduce the emerging costs, whereas we consider (i) various damage functions, (ii) discounting, and (iii) different sea level rise scenarios. By means of Monte-Carlo-Simulations we validate our findings and thus obtain a consistent framework for damage cost estimations.