



Upper Limit for Regional Sea Level Projections

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With more than 150 million people living within 1 m of high tide future sea level rise is one of the most damaging aspects of warming climate. The latest Intergovernmental Panel on Climate Change report (AR5 IPCC) noted that a 0.5 m rise in mean sea level will result in a dramatic increase the frequency of high water extremes - by an order of magnitude, or more in some regions. Thus the flood threat to the rapidly growing urban populations and associated infrastructure in coastal areas are major concerns for society. Hence, impact assessment, risk management, adaptation strategy and long-term decision making in coastal areas depend on projections of mean sea level and crucially its low probability, high impact, upper range.

With probabilistic approach we produce regional sea level projections taking into account large uncertainties associated with Greenland and Antarctica ice sheets contribution. We calculate the upper limit (as 95%) for regional sea level projections by 2100 with RCP8.5 scenario, suggesting that for the most coastlines upper limit will exceed the global upper limit of 1.8 m.