

# 4<sup>th</sup> International Conference on **Earth Science & Climate Change**

June 16-18, 2015 Alicante, Spain

## **Risk assessment of sea level rise in the coastal zone of Tianjin, China**

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Global warming and sea level rise are serious issues of coastal zone development. Coastal zone is a vulnerable area with dense population and estates convergency. The study area—Tianjin coastal zone is an important new developing area in north China but bears more and more stress facing the risk of sea level rise. As local area, it suffers from relative sea level rise which not only as global warming but also as local land subsidence, both aspects add and form a place with one of highest sea level rise. By using sea level data of tide gauge station and a stochastic dynamic model, combining with wavelet analysis and relative models, sea level rise to 2020 and 2050 are predicted, and extreme storm surge is calculated. Based on the data of precise leveling survey, spatial distribution and variation trend of land subsidence in Tianjin coastal area are predicted using water resource supply and demand balance analysis and subsidence control policy scene setting. According to land use and city plan, risk assessments for sea level rise with storm surge are made. Assessment results show the losses of submerged area in different situation. It will provide scientific basis for regional risk management and adaptive coastal development.

### **Biography**

Xuegong Xu is the corresponding author of this paper. She has completed her PhD from Peking University in 1993 and is a professor of Peking University now. She has published more than 100 papers in reputed journals.

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