

Kelman, I., F. Thomalla, J. Brown, I. Möller, R. Spence, and T. Spencer. 2002. "Coastal Flood Risk Assessment in England". Poster 20 in Philosophical Transactions of the Royal Society of London, vol. A360, no. 1796, pp. 1553-1554.

Poster abstract:

Urban areas near coasts and estuaries are increasingly at risk from flooding due to inappropriate development practices and the interaction of rising sea levels with storm surge events. The development of sustainable flood-management strategies requires a sound understanding of the potential impacts of a storm surge and, in particular, the flood depths and velocities that are likely to be experienced inland for a range of defence-failure scenarios. Integrated flood models are developed for two case-study sites, in order to investigate the potential consequences on residential areas of a major sea-defence failure.

Potential damage to residential buildings is explored through a detailed analysis of residence vulnerability. An innovative system of residence classification is developed to identify key potential weaknesses to floods. Water depths and velocities predicted by the inundation model are used to calculate flood-water infiltration rates and brickwork, wall and window-pane failure. Based on these findings, sustainable risk management strategies are recommended.