



How to find every river delta on Earth?

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Earth-surface change and its associated hazards are particularly pronounced in low-lying deltaic areas. Recent developments in the understanding of deltaic change and its connections to climate and land use call for models to assess these linkages on a global scale. At the core of such models there must be a robust algorithm to determine the location of river mouths.

Here I will discuss efforts to use global elevation, climate, and feature extraction models to find all river deltas. Two major algorithmic challenges have been that data uncertainties in global products are magnified in low relief areas, and that traditional stream models are unable to handle distributary flow networks. As expected, we also find that the number of river mouths depends on data resolution. Nevertheless, we consistently find around 15.000 coastal river deltas in varying degrees of alluviation.