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Since the Last Glacial Maximum (LGM; ~22 ky ago), sea levels rose up to ~130 m globally and causing reductions of island areas and sometimes fragmentation of islands into several smaller islands. The dynamic equilibrium theory predicts extinctions and lower species richness for islands that shrunk in areas and that became more isolated. Numerical modeling of the palaeogeographic effects of sea level rise allows for testing the effects of sea level rise by quantifying timings and rates of connectivity loss, fragmentation and area reduction over time steps of 1000 year for one or more glacial-interglacial cycles. However such model must take into account all the interrelated physical mechanisms that compose the glacial isostatic adjustment process: (i) the ice- and water-load induced solid Earth deformations, (ii) the change of mutual gravitational pull between continental ice sheets and ocean, (iii) the movements of the Earth's rotation axis with respect to the surface in response to