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# Iterative algorithm for improvement of the Shallow Ice Approximation solution of a 3-D ice flow

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We present a new iterative method for solving the full-Stokes solution of a 3-D ice flow, based on the successive improvement of the Shallow Ice Approximation (SIA). Since the computational costs for each iteration step are comparable to the solution of the SIA, this method provides a useful tool for a fast solution improvement of the standard SIA models in the regions where higher-order stress components must be considered. We present solutions for the geometrical configurations suggested in the benchmark experiment for higher-order models (Ice Sheet Model Intercomparison Project), and we investigate the convergence properties of the iterative method with regard to both the variations of internal parameters and of the height-length scale ratio of glacier geometry.