

Solution procedure in the OM paper:

Step	Content	Function (phys.c)
1	Solve the linear system arising from Equation (52) for the elevation of the free surface η^{n+1} .	UPredictor
2	Compute the horizontal predictor velocity u_f^* with Equation (47).	UPredictor
3	Update the layer thickness at the cell centers h^{n+1} and the grid location x_3^{n+1} using the methods outlined in Section 4.	UPredictor
4	Compute the predictor cross-coordinate velocity W^* .	Continuity
5	Solve the discrete scalar transport Equation (61) for the salinity or temperature field using the predictor velocities u_f^* and W^* .	UpdateScalars
6	For a hydrostatic model, return to step 1 with $u_f^{n+1} = u_f^*$ and $W^{n+1} = W^*$. Otherwise, solve the vertical momentum Equation (48) for the predictor vertical velocity u_3^* . Then, compute the vertical contravariant volume flux U_3^* using the predictor velocities u_f^* and u_3^* with Equation (60).	WPredictor ComputeOmega
7	Solve the Poisson Equation (57) for the nonhydrostatic pressure correction q_c , and update u_f^{n+1} with the corrector step Equation (53).	CGSolveQ Corrector
8	Compute the cross-coordinate velocity W^{n+1} .	Continuity
9	Finally, update the nonhydrostatic pressure $q^{n+1/2}$ with Equation (55), which is identical to the original SUNTANS model.	Corrector