

non-straggered grid:

所有参数都在一个网格上

half-straggered grid

部分参数在基础网格上，部分参数在四个网格中心

Half-staggered grid is natural for solving the combination of Stokes (Poisson) and continuity equations **in case of constant viscosity** when unknown parameters are components of velocity ( $v_x$ ,  $v_z$ ) defined in basic nodes and

pressure (P) defined in additional nodes straggered grid。

不用参数在不同网格，包括矩形四条边的中心；

conservation finite-differences:

boundary conditions

- (1) no slip,
- (2) free slip,
- (3) free surface,
- (4) fast erosion and
- (5) combined boundary conditions