

SUITABLE CHOICES FOR THE SUBGRIDS

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In recent times it became clear that the choice of a suitable subgrid can play an essential role. This appears to be true not only in problems where the subscale effect is obviously the main concern, as for instance in homogenization problems, but also in less obvious cases, such as the stabilization of numerical schemes for incompressible fluids or advection-reaction-diffusion problems. Indeed, a proper choice of the subgrid, or of different subgrids for different variables, appears to be equivalent (or very similar to) classical stabilizing techniques, such as SUPG, Residual Free Bubbles, and the like. The talk will briefly overview the main issues concerning the effect of the choice of the subgrid on the coarse-grid problem, and discuss the criteria that can be used in order to identify a good choice for the subgrid (if not the optimal one).