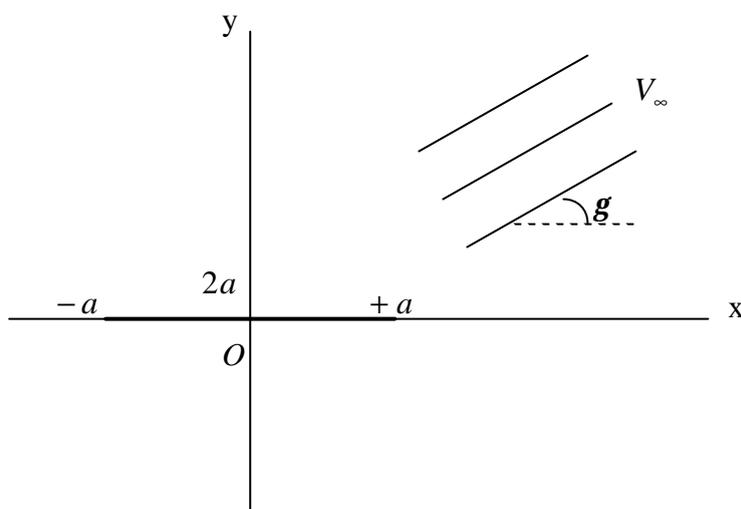


程式 99 A thin sheet in a plane-parallel flow

Governing equation : $\nabla^2 u = 0$

A thin sheet of width $2a$ is placed in a plane-parallel flow of an ideal fluid. Find the velocity potential, assuming that the direction of the flow makes angle g with the plane of the sheet.

The analytical solution is $u = V_\infty (x \cos g + y \sin g + a \sin g e^{-a} \sin b)$, where V_∞ is the velocity of the flow far from the sheet.



Reference

N.N. Lebedev, I.P. Skalskaya, T.S. Uflyand, Work Problem in Applied Mathematics, Dover, New York, 1979.