

If this is stiff, then one says that the nonlinear system of ODEs is locally stiff around (t_n, \vec{y}_n) .

Ex.: (17) Stiff nonlinear system

→ slides (Stiff nonlinear IVP)

We conclude from Ex. (16) and (17) that explicit methods are inefficient for the numerical treatment of stiff problems:

because the step size is dictated by stability and NOT accuracy considerations

explicit		implicit
cheap per step		expensive per step
step size limited by fastest decaying component		step size only limited by desired accuracy