

Def.: A method is called A-stable if the whole left complex half plane is contained in the SR:

$$\{z \in \mathbb{C} \mid \operatorname{Re}(z) < 0\} \subset SR$$

Hence, for A-stable methods there is no time step restriction for $\lambda < 0$!

Ex.: (15) A-stability of EE, IE, EM, ET, IM and RK4 methods

→ slides (Stability regions)

Rem.: In general, explicit RK methods are not A-stable