

- Dahlquist equivalence theorem:
- First Dahlquist stability barrier and its application:
- How are Adams-Bashforth (AB) and Adams-Moulton (AM) methods derived? What is the main difference between an AB and AM method?
- How are backward differentiation formulae (BDF) derived? What is the main difference between Adams methods and BDF methods?
- What is the idea behind predictor-corrector methods?

2.3 Runge-Kutta methods

- How are they derived (just the basics)?
- How do they differ from linear multistep methods?
- Butcher diagram notation.
- Implicit vs. explicit.

- Definition of A -stability? Why is A -stability important?

- What methods are A -stable?

- Definition of $A(\alpha)$ -stability?