divided differences: history

**Newton:** Newton form (see Fraser27, KowalewskiA17))

**Ampere26:** fonctions interpolaires

**Cauchy40:** refinement formula for first-order dvl’s

**Morgan42:** first use of ‘divided difference’?

**Genocchi69:** Genocchi-Hermite formula

**Frobenius71:** representation by contour integral; definition and convergence analysis of Newton form with infinitely many centers, hence Hermite interpolation as a very special case.

**Hermite78:** Hermite interpolation, Genocchi-Hermite formula.

**Schwarz81:** mean-value formula

**Stieltjes82:** limit of \( \Delta(t_0, \ldots, t_n)f \) as \( t_0, \ldots, t_n \to a. \)

**Hopf26:** characterization of functions whose \( n \)-th divided differences are bounded by some constant (e.g., above, below, above and below); also \( \Delta(t_0, \ldots, t_n) - \Delta(s_0, \ldots, s_n) = \sum_{j=0}^{n}(t_j - s_j)\Delta(t_0, \ldots, t_j, s_j, \ldots, s_n); \) etc.

**Popoviciu33:** Leibniz rule; general refinement formula; \( n \)-convexity.

**Chakalov38:** explicit formula for \( \Delta(t_0, \ldots, t_n) \) using the partial fraction expansion of \( 1/\prod_{j=0}^{n}(\cdot - t_j). \)

**Opitz64:** \( (\Delta(t_i, \ldots, t_j)f : i, j = 1, \ldots, n) = f(\Delta(t_i, \ldots, t_j)(i) : i, j = 1, \ldots, n). \)

24nov04