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Convolution integral in transient pipe flow

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This work concerns modeling of unsteady wall shear stresses during transient liquid pipe flow. The wall shear stress is presented in the way introduced first by Zielke (1968) as the integral convolution of a liquid local velocity changes and a weighting function.
In the literature one will find many numerical solutions of the integral convolution. Most precise one is the classic solution presented by Zielke (1968) and a modificated version of that solution presented by Vardy-Brown (2010). In 1975 Trikha was the first who presented an effective solution of the integral convolution. His solution based on a assumption that weighting function is a finite sum of exponential terms:

$$w_{apr.} = \sum_{i=1}^{k} m_i e^{-n_i \hat{t}} \tag{1}$$

Later in the literature one can find a modification of Trikhas effective solution. First Kagawa et all. (1983) modificated Trikhas solution, and later Schohl (1993) did.
In this paper all known solutions of integral convolution will be compared. The final results of the comparation will help to chose a proper numerical solution of integral convolution, that characterized with the smallest errors.