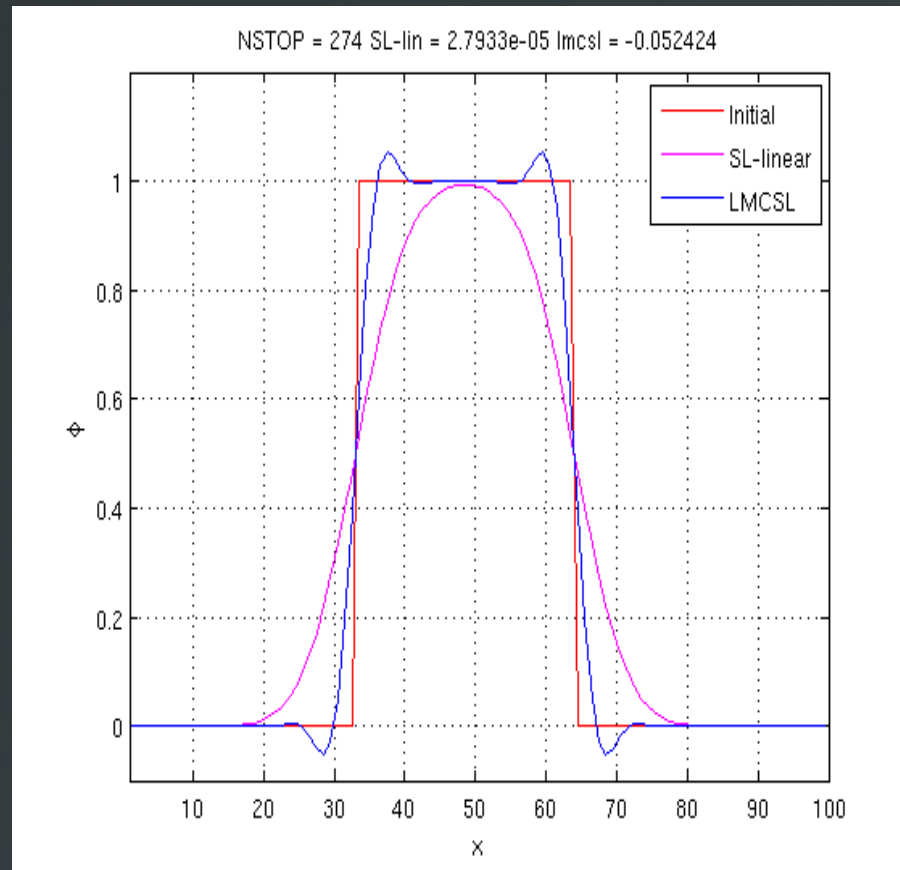# Combining a spatial filter with a new locally mass conserving semi-Lagrangian transport scheme.
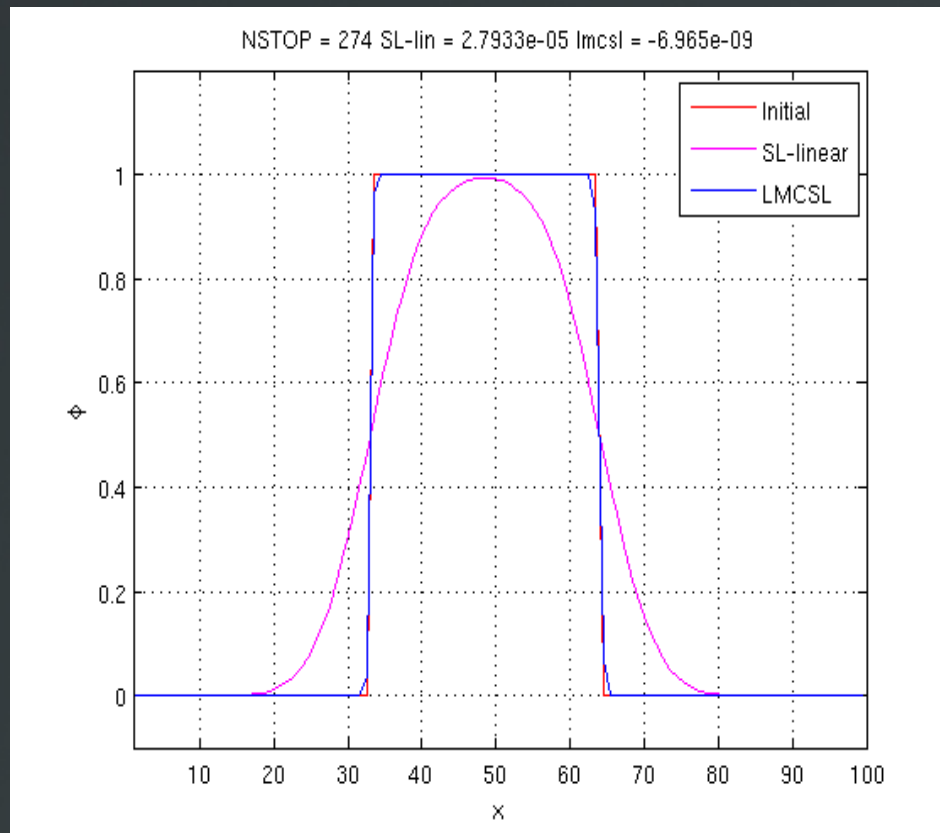
- 1D model of LMCSL with new filter
- Implementation of an adaptive grid in order to make it more local
- Comparison with filter of Zerroukat 2005
- Implementation in Enviro-Hirlam

Locally mass conserving semi-Lagrangian transport scheme.

- Builds on traditional SL-scheme

- Uses modified interpolation weights at the upstream departure points to ensure local mass conservation

- As least as accurate as traditional SL-schemes.

"Locally" mass conserving spatial filter

NSTOP = 274 SL-lin = 2.7933e-05 lmcsl = -6.965e-09

- Monotonic
- Positive definite
- Enhances accuracy
- Detection of monotonicity violation regions
- Redistribution of mass
- Further improvements is to test the filter with adaptive grids