# Equilibrium Dispersive Model with Nonlinear isotherm

Equilibrium dispersive model with nonlinear isotherm:

Feed injection piecewise function:

Left boundary:

Right boundary:

Initial Conditions:

Mesh definition:

in dimension *x* is divided into *n* same parts: ,

in dimension *t* is divided into *r* same parts: ,

The set of nodes that will arise in intersecting lines *x = ih* and *t = jk* is rectangular mesh . Notation:

# Explicit Central difference scheme

Centered Differencing formulas in space:

Second-order centered differencing formulas in space:

Forward differencing in time:

Full approximation:

Left boundary:

Right boundary:

## Solution

General expression:

Left boundary:

Right boundary:

## Convergence proof