A Two-level Second-order Finite Difference Scheme for the Single Term Structure Equation

T. Chernogorova, R. L. Valkov

Faculty of Mathematics and Informatics, St. Kl. Ohridski University of Sofia
5 J. Bourchier Blvd., 1164 Sofia, Bulgaria

In [1] the classical single factor term structure equation for models that predict non-negative interest rates is studied. For these models the authors proposed a second order accurate three - level finite difference scheme (FDS) using the appropriate boundary conditions at zero. For the same problem we construct a two-level second-order accurate (FDS). The flexibility of our FDS makes it easy to change the drift and diffusion terms in the model. A transform method that reduces the equation on a finite interval is also discussed.

References

[1] E. Ekstrom, P. Lotstedt and J. Tysk (2009) *Appl. Math. Finance*, **16**, No 3.

$$\rightarrow \infty \diamond \infty \leftarrow$$