

Application of DDFV scheme for regularised Heston model

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The talk will be dedicated to the so-called Heston model introduced in [3] and mainly its regularized version with the application of this model for the financial derivatives' price development modelling. Approach stated in [1] and in [2] is followed as we construct the discrete duality finite volume (DDFV) scheme for this model. In the [4] convergence of the scheme to the weak solution of the problem was proven based on the stability estimates of the schema. The last part will be dedicated to the numerical experiments to demonstrate impact of model parameters.

References

- [1] Handlovičová A.: Discrete duality finite volume scheme for solving Heston model, Proceedings of ALGORITHMY 264-274, 2016.
- [2] Handlovičová A.: Stability estimates for discrete duality finite volume scheme for Heston model, Computer Methods in Materials Science, 17, 101-110, 2017.
- [3] Heston, S. L.: A Closed-Form Solution for Options with Stochastic Volatility with Applications to Bond and Currency Options. In: The Review of Financial Studies 6, 2, 327-343, 1993, ISSN: 0893-9454.
- [4] Tibenský M., Handlovičová A.: Convergence analysis of the discrete duality finite volume scheme for the regularised Heston model, Discrete and Continuous Dynamical Systems - S, , doi: 10.3934/dcdss.2020226, 2018.