

## **An agent-based artificial options market**

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The use of mathematical and computational models to represent stock and options market dynamics has been discussed by many researchers and practitioners. Since the Black-Scholes-Merton model, a series of new approaches have been proposed. However, current models often fail to replicate some empirical behaviors of financial markets. In order to solve this gap, this work presents an agent-based model that includes both the options market and the underlying stock market. The implemented artificial market was able to reproduce the theoretically expected behavior of an option, as well as stylized facts of stock markets and options markets.