

## ABSTRAK

Penurunan model Black-Scholes dapat dilakukan dengan beberapa cara seperti model binomial maupun persamaan diferensial parsial. Penelitian ini membahas penurunan rumus opsi *call* tipe Eropa dengan model persamaan diferensial parsial Black-Scholes dan simulasi pada harga saham SCHW. Metode yang digunakan dalam penurunannya adalah dengan mentransformasikan model persamaan diferensial parsial Black-Scholes ke persamaan difusi. Selanjutnya, solusi analitik persamaan difusi diselesaikan menggunakan transformasi Fourier. Pada hasil simulasi didapat harga opsi *call* 8,844, 6, 785, 5,861, 5,222, 4,628, 4,360, dan -2,771.

**Kata kunci:** opsi *call* tipe Eropa, persamaan diferensial parsial Black-Scholes, persamaan difusi, transformasi Fourier.



## **ABSTRACT**

*The Black-Scholes model can be derived in a variety of methods, including using the binomial model and partial differential equations. The Black-Scholes partial differential equation model is used to derive the European type call option formula, which is then used to simulate the stock price of SCHW. The Black-Scholes partial differential equation model is transformed into a diffusion equation in the derivation. The Fourier transform is then used to find the diffusion equation's analytical solution. The simulation results 8,844, 6, 785, 5,861, 5,222, 4,628, 4,360, and -2,771.*

**Keyword:** *European call option, Black-Scholes partial differential equation, diffusion equation, Fourier transform.*

