

DATA.STAT.610-2024-2025-1 Financial Mathematics and Statistics
Project Work 2025
Student Number : 152996512

Output screenshot

```
Current Loss: 7.6505e-05
Current Parameters (kappa, theta, eta, rho, V0):
      8.0281      0.0243      1.3610     -0.5678      0.0027

Current Loss: 7.6505e-05
Calibration Results (Hessian-based):
Estimated values: 8.0281      0.024335      1.361      -0.56784      0.0026683
t-values: 344.7689      337.1184      361.5268      -356.1226      466.7994
Standard errors: 0.023286      7.2186e-05      0.0037645      0.0015945      5.7161e-06
In-Sample MSE: 7.6505e-05
Price of down-and-in arithmetic Asian average strike call: 0.0037264
^^
```

Output as a table for better visualization

Current Loss	7.6505e-05
In-Sample MSE	7.6505e-05
Price of Down-and-In Arithmetic Asian Average Strike Call	0.0037264

Parameter	Estimate	Standard Error	t-Value
kappa	8.0281	0.023286	344.7689
theta	0.024335	7.2186e-05	337.1184
eta	1.361	0.0037645	361.5268
rho	-0.56784	0.0015945	-356.1226
V0	0.0026683	5.7161e-06	466.7994

Initial Parameters

```
kappa = 6;
theta = 0.3^2;
eta = 0.8;
rho = -0.8;
V0 = 0.18^2;
```

