1. Transform pricing of options on realized variance

- Why Laplace transform?

Price non-Black-Scholes models that have closed-form expressions for the characteristic function of log(S\_T)

Carr(2005)

- Improvement of the paper

Improve the result by the use of control variate

A numerical Laplace inversion algorithm GQ\_FFT

- Why we use a control variate?

Eliminate the slowly decaying terms

- Why choose Gamma distribution as proxy distribution?

We can derive the Laplace transform of Gamma distribution in closed form

- What we can do now?

1. C(0) for Heston model and 3/2 model
2. Proxy distribution for Heston model and 3/2 model
3. Laplace transform of C(0) and C(K) for each lambda.

- Main difficulty

The Laplace inversion algorithm, how to apply FFT if the function involves a imaginary part.