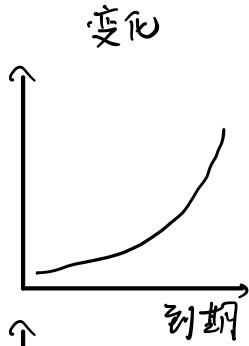
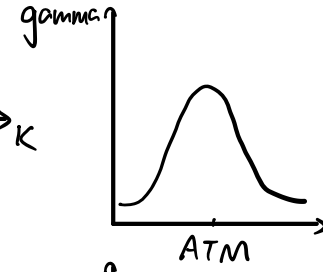
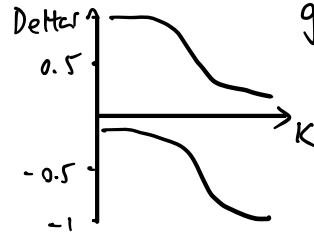
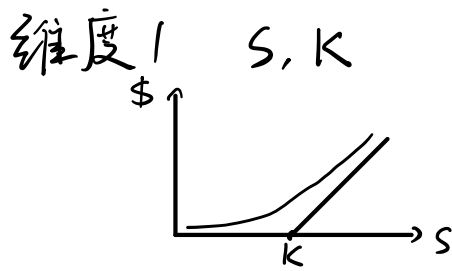
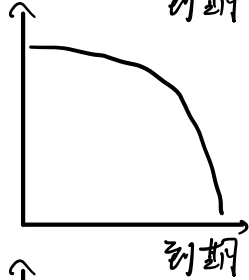
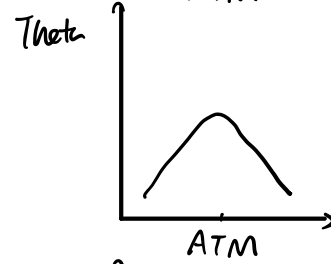


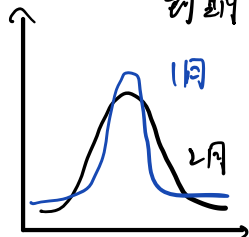
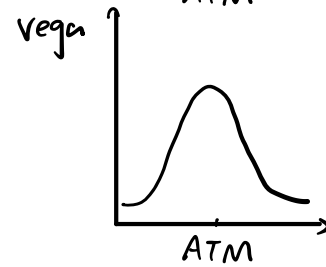
初 BSM
 中 套利: bound, PC, butterfly
 高 Vol Surface



维度 2 T



维度 3 σ



维度 4 r, q

Delta

	C	P
Long	+	-
Short	-	+

看涨正 Delta

Gamma, Vega

	C	P
Long	+	+
Short	-	-

买方正 gamma
 看涨 2V 正 vega

Theta

	C	P
Long	-	-
Short	+	+

卖方正 theta

BSM

1. 参数 6 + 1 $S, K, r, q, \sigma, T \rightarrow V$
 $S, K, r, q, T, V \rightarrow \sigma$
2. 验证 Put - Call Parity
3. 画出价格曲线
4. 计算 delta : (1) $N(d_1)$
(2) finite difference
$$\text{delta} \approx \frac{f(S_0 + \Delta S) - f(S_0 - \Delta S)}{2\Delta S}$$
$$\frac{\partial f}{\partial S}(S_0)$$
5. 计算 gamma, vega, theta.

策略

开仓, 变化, 临期

到期

delta gamma theta vega

breakeven max min K, T

单腿买

LEAP Call

CC

PP

裸卖 Put

Spread.

适用场景	优缺点	前置条件	操作
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