Methods for Recovering the Call Surface

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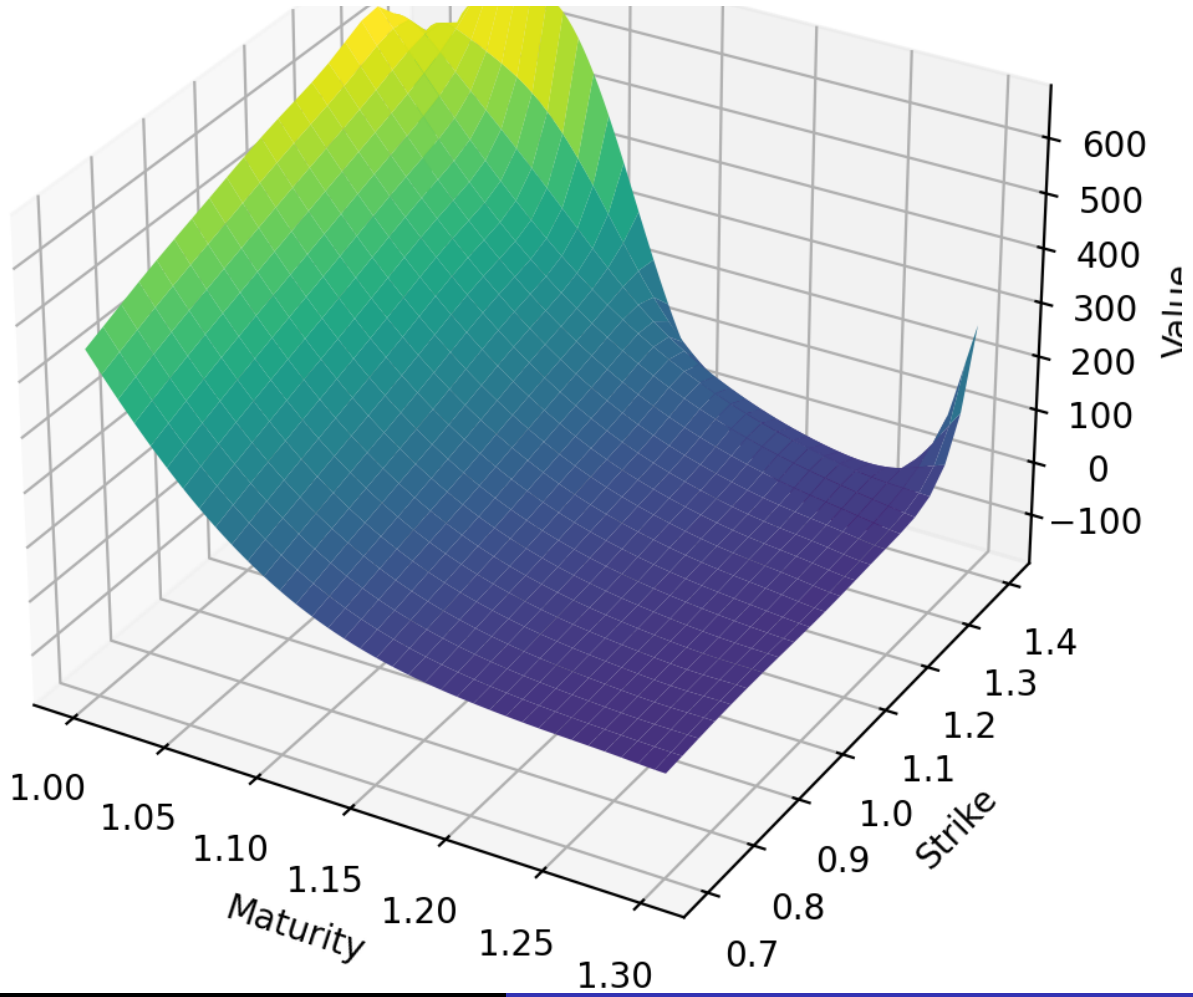
Orthogonal Polynomials and l^2 minimization

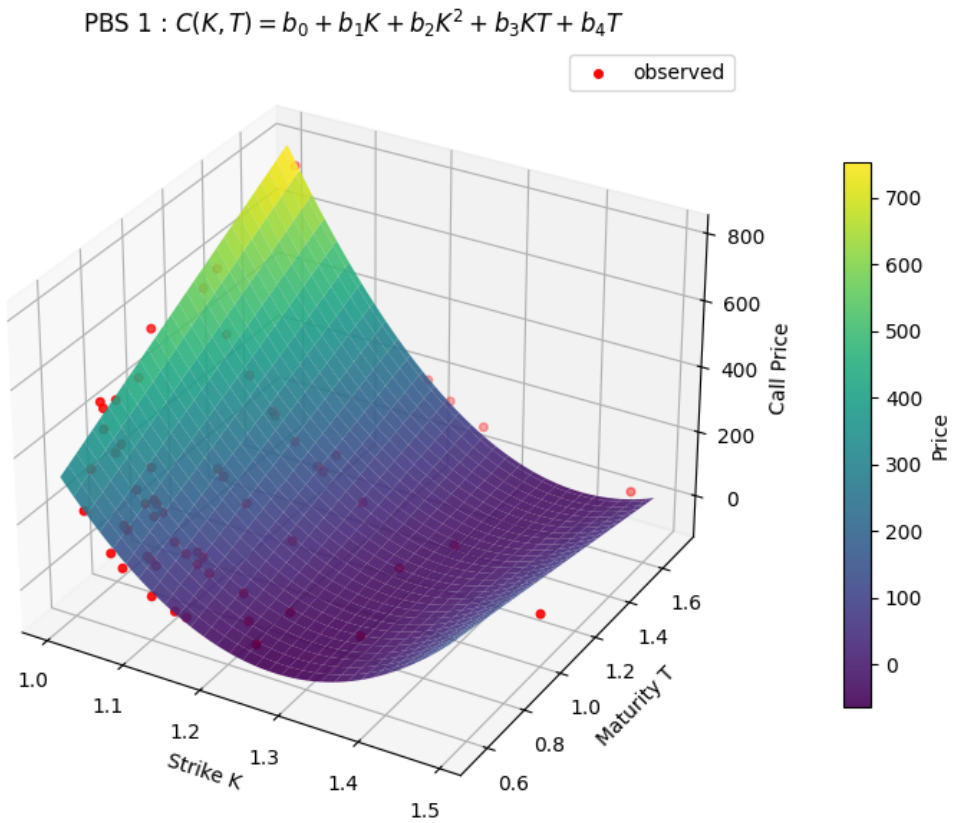
- Orthogonal polynomials on strikes K and Maturities T of product $P(K)Q(T)$
- l^1-minimization from signal processing



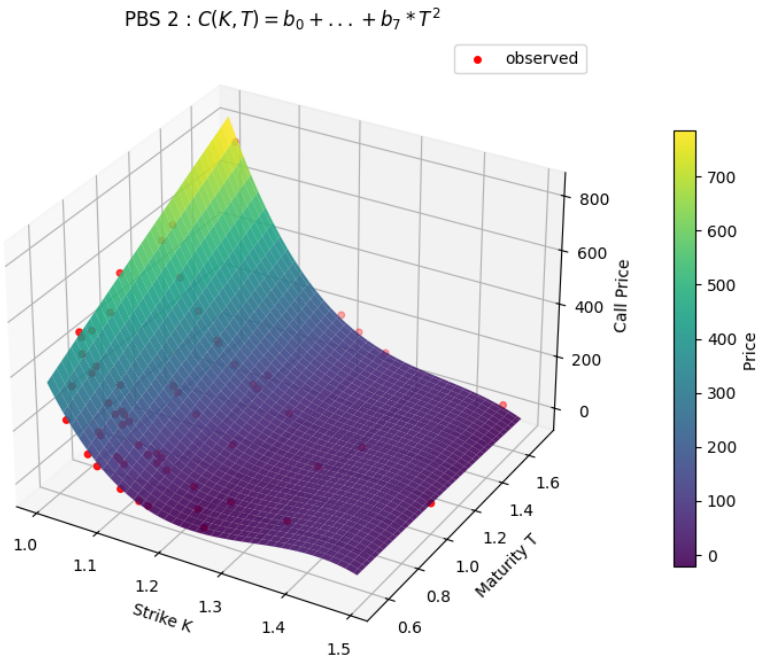
Practitioner's Black Scholes (PBS)

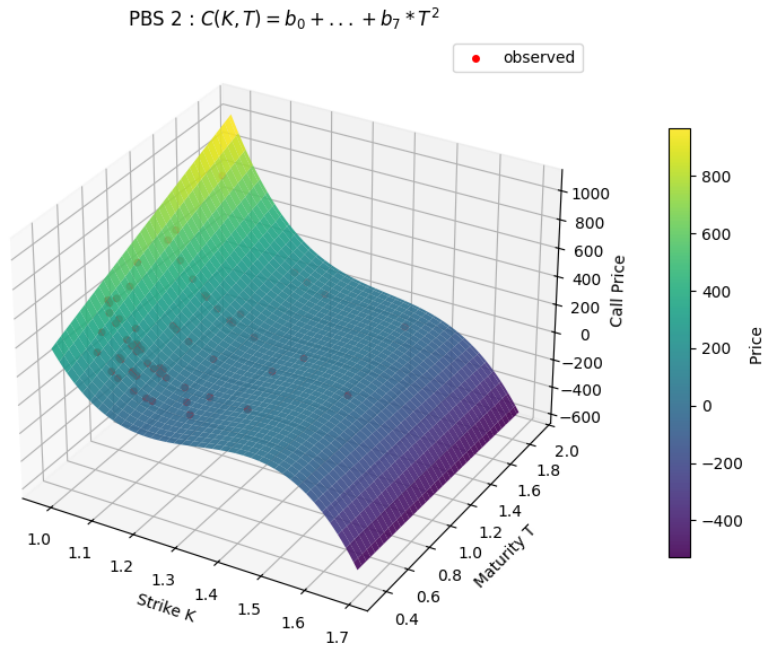
Regression to surfaces in two dimensions.

- (PBS 1) $C(K,T) = b_0 + b_1 K + b_2 K^2 + b_3 KT + b_4 T$
- (PBS 2) $C(K,T) =$
  $b_0 + b_1 K + b_2 K^2 + b_3 KT + b_4 T + b_5 K^3 + b_6 K^2 T + b_7 T^2$

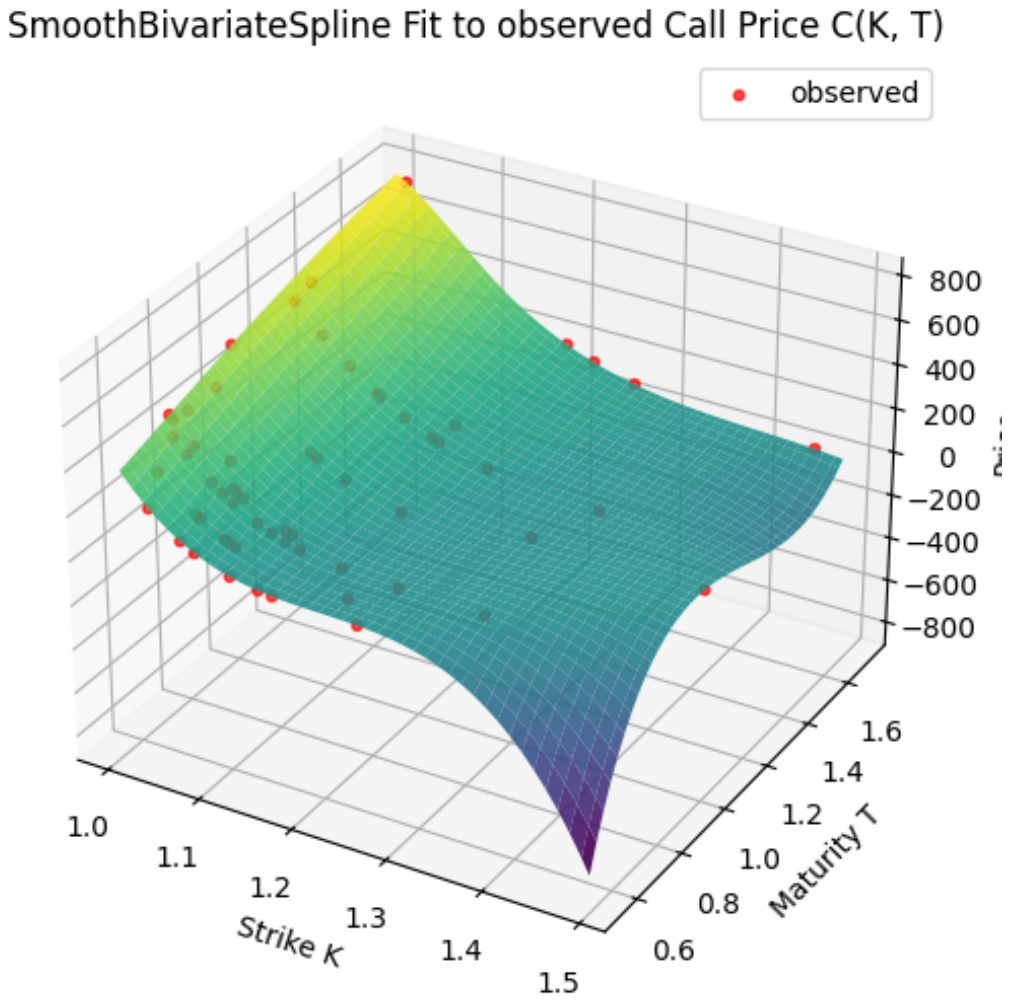


Practitioner's Black Scholes (PBS 2)

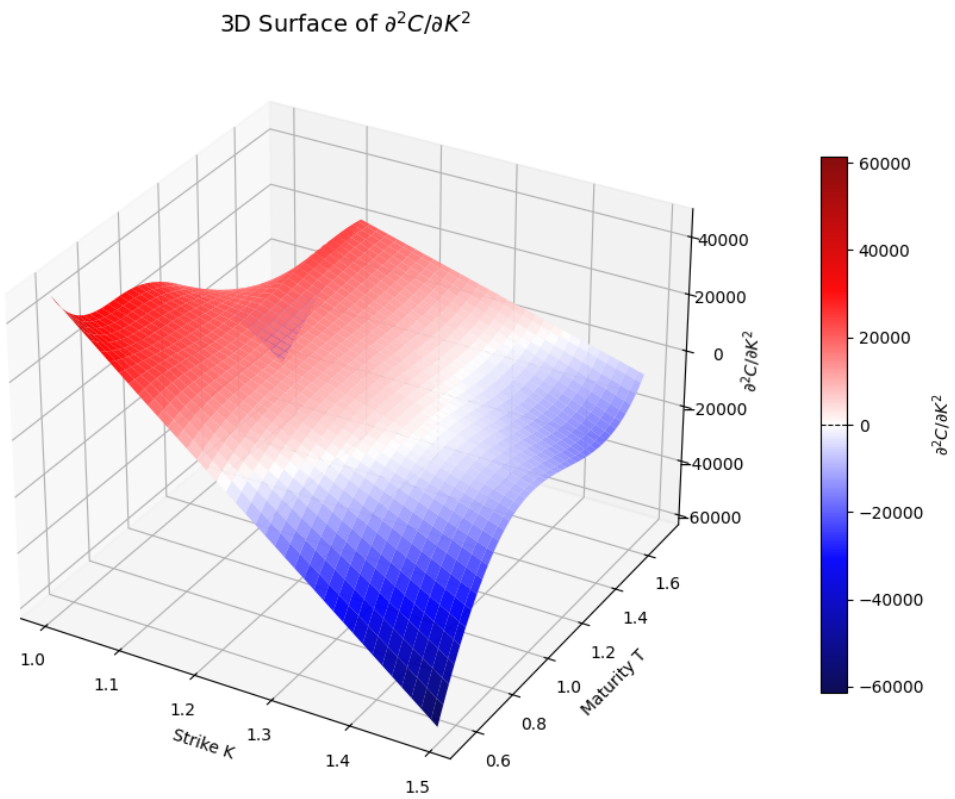




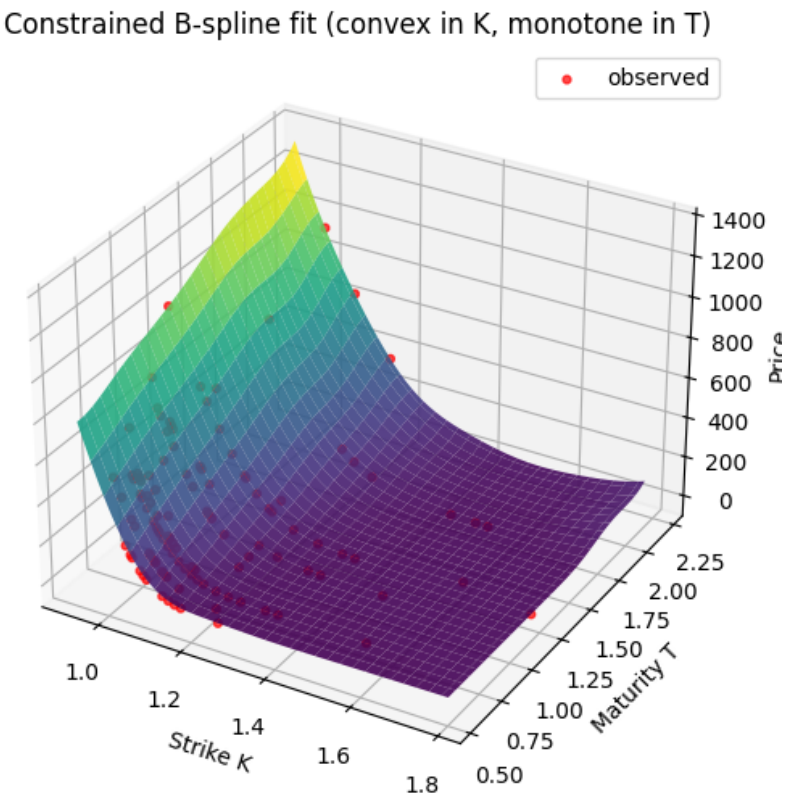
Interpolation

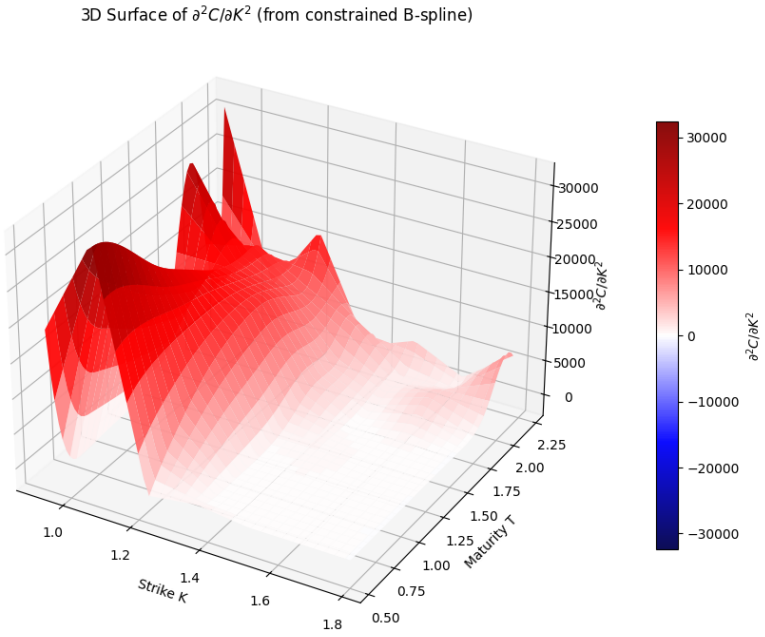


Interpolation

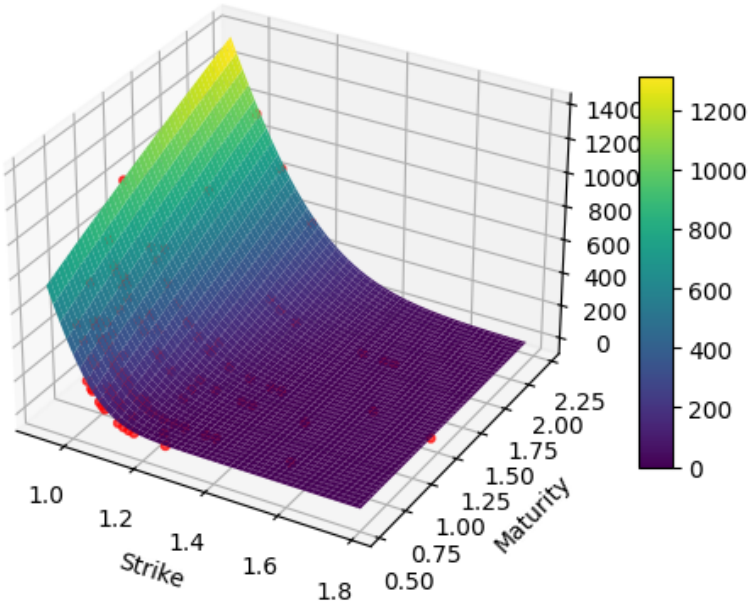


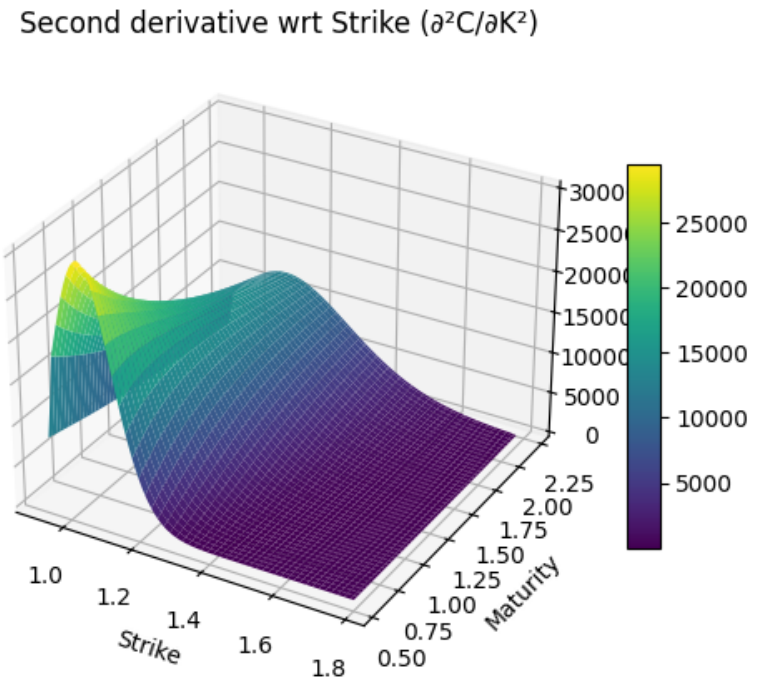
Interpolation with No-Arbitrage Constraints





Black Scholes





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Thank you!