function vols = getSmileVol(curve, Ks)

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% Inputs:

% curve: pre-computed smile data

% Ks: Strike

% Outputs:

% vols: IV at strikes Ks

Target:

Utilize the smile curve we get from function makeSmile, and then performs the actual interpolation and extrapolation.

Steps of implementation:

1. Check for invalid input.

2. Calculate interpolation value (vols) with function ppval.

3. Calculate extrapolation value (vols) with mathematic definition.

Output:

We utilize options data (T=2) to construct Smile curve, and then split each interval into 50 points and calculate their predicted implied volatilities. From following chart, we find that their output is smooth and behave as expected. Besides, at K1 and KN, 1st derivative of the spline functions are continuous and 2nd derivative of the spline functions are zero (natural boundaries).

