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## fd\_fem\_out\_bs

Input parameters:

- SpaceStepNumber  $N$
- TimeStepNumber  $M$
- Theta  $\frac{1}{2} \leq \theta \leq 1$
- Refinement  $1 \leq ref \leq 4$

Output parameters:

- Price
- Delta

This finite element [there](#) scheme used a trapeizodal grid that is refined near the barriers, using a simple bell-shaped function to compute the point density in space.[\[1\]](#) In the american case we use the splitting methods. It seems that it converges very slowly. For this routine we send the reader to the [Routine fd\\_fem\\_updownout\\_bs.c](#)

## References

- [1] J.BUSCA. A finite element method for the valuation of american options. Technical report, C.A.R. Internal Report, 1998. [1](#)