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fd_psor2d

Input parameters:

- SpaceStepNumber N
- TimeStepNumber M
- Omega $1 \leq \omega \leq 2$
- Epsilon

Output parameters:

- Price
- Delta1
- Delta2

/*Memory Allocation*/

/*Space localisation*/

Define the integration domain $D = [-l, l]^2$ using probabilistic estimation.

/*Space Step*/

Define the space step $h = \frac{2l}{M}$.

/*Time Step*/

/*Terminal Values*/

Put the value of the payoff into a vector P

/*Homegenous Dirichlet Conditions/*

/*Finite difference Cycle/*

At any time step, described by the loop in the variable *TimeIndex*, we have to solve the linear system with Psor Algorithm (cf. [there](#))

/*Psor Cycle/*

/*Projection for American case*/

For American options, we compare at each time step the solution in P with the payoff function saved in *iv*. We save the result in P

/*Price*/

/*Delta*/

/*Memory Desallocation*/