

SCENARIO GENERATION

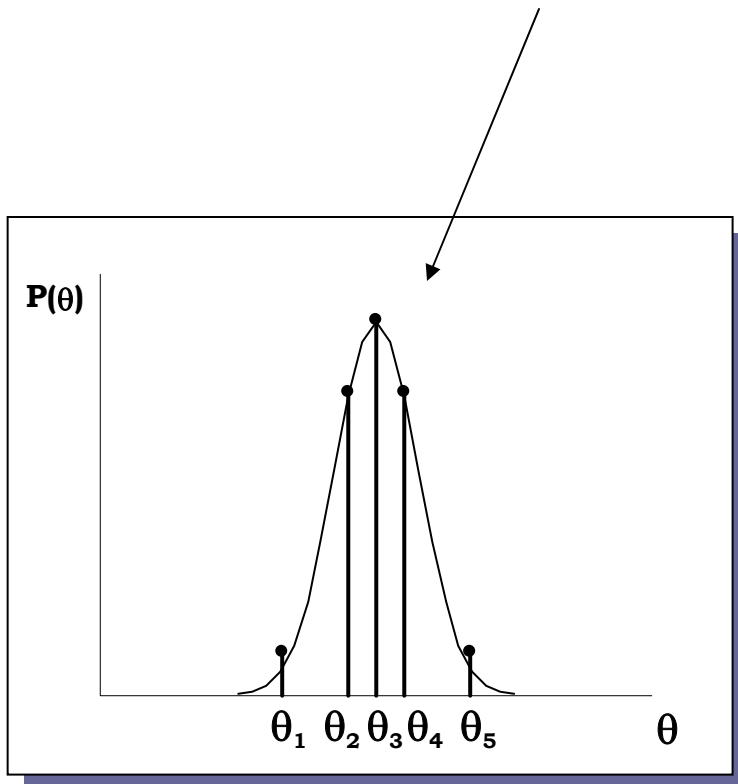
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SCENARIO GENERATION

Consider each parameter's probability distribution.



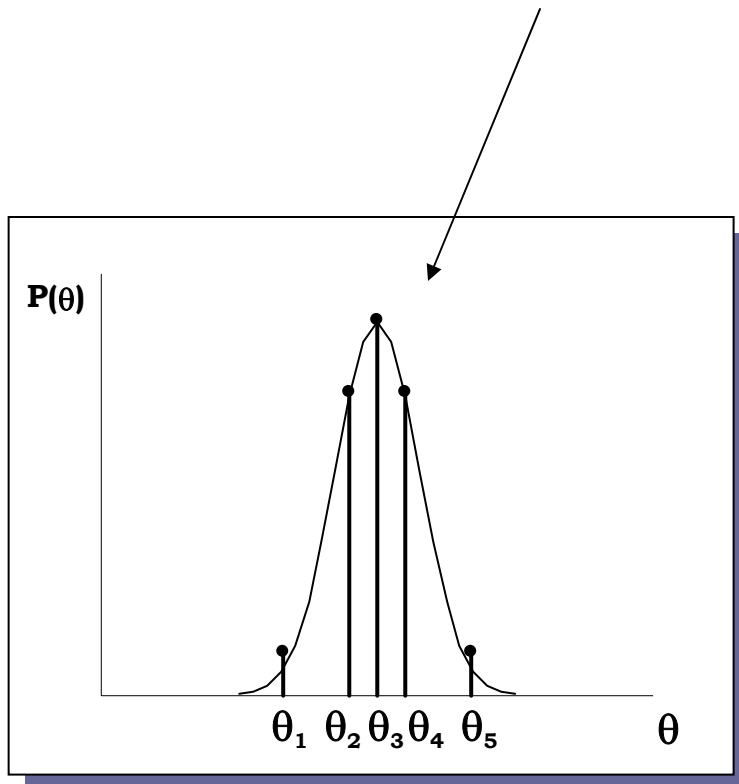
Discretize it.

Option 1: pick values of probabilities. For example, for 3 values, pick 25%, 50% and 25% probability and find the values. Use the cumulative curve to locate the numbers.



SCENARIO GENERATION

Consider each parameter's probability distribution.



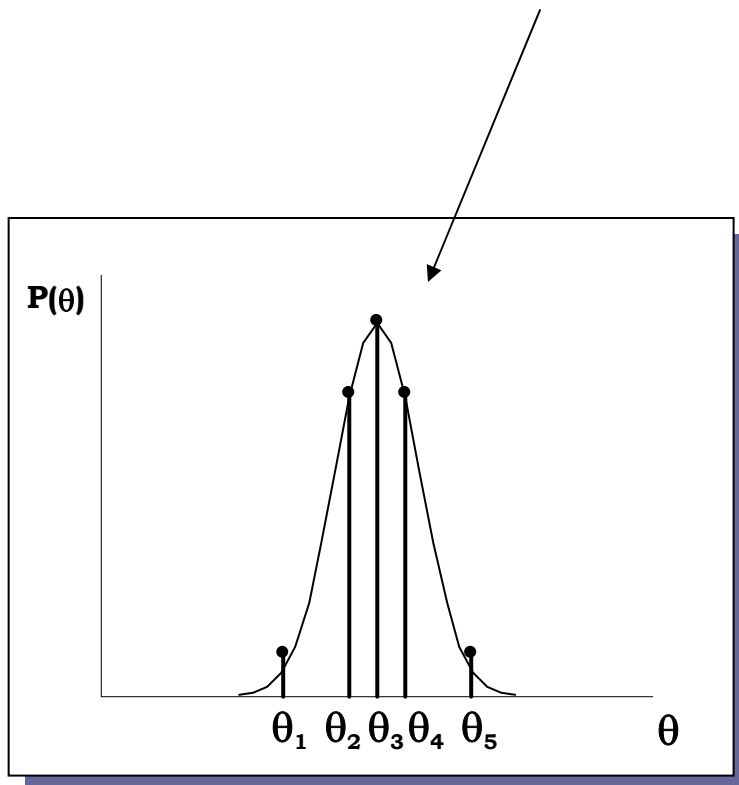
Discretize it.

Option 2: *pick values (equidistantly or randomly) and find the probability that corresponds to them from the area they “span”. Use the cumulative curve for this.*



SCENARIO GENERATION

Consider each parameter's probability distribution.



Discretize it.

Option 3: pick equal probability values and find parameter values. For example, for 3 values, pick 33% and locate the points. Use the cumulative curve to do this.

FOR A LARGE NUMBER OF SAMPLES WE USE THIS OPTION

(It is the easiest and it is equivalent to the other two)



SCENARIO GENERATION

Each scenario is constructed by picking one realization for each parameter.

EXAMPLE:

2 parameters (θ_1, θ_2). If each parameter is discretized in three instances

($\theta_{i,low}$, 25%, $\theta_{i,avg}$ 50%, $\theta_{i,hig}$ 25%)



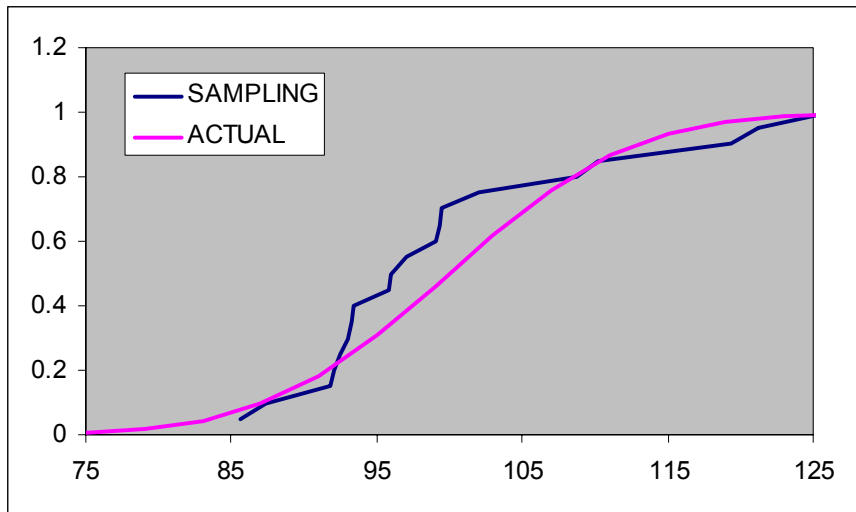
SCENARIO GENERATION

<i>Scenario</i>	<i>Probability</i>	<i>Scenario</i>	<i>Probability</i>
$\theta_{1,low}, \theta_{2,low}$	6.25%	$\theta_{1,hig}, \theta_{2,low}$	6.25%
$\theta_{1,low}, \theta_{2,avg}$	12.5%	$\theta_{1,hig}, \theta_{2,avg}$	12.5%
$\theta_{1,low}, \theta_{2,hig}$	6.25%	$\theta_{1,hig}, \theta_{2,hig}$	6.25%
$\theta_{1,avg}, \theta_{2,low}$	12.5%		
$\theta_{1,avg}, \theta_{2,avg}$	25.0%		
$\theta_{1,avg}, \theta_{2,hig}$	12.5%		
		<i>SUM OF ALL PROBABILITIES=1</i>	



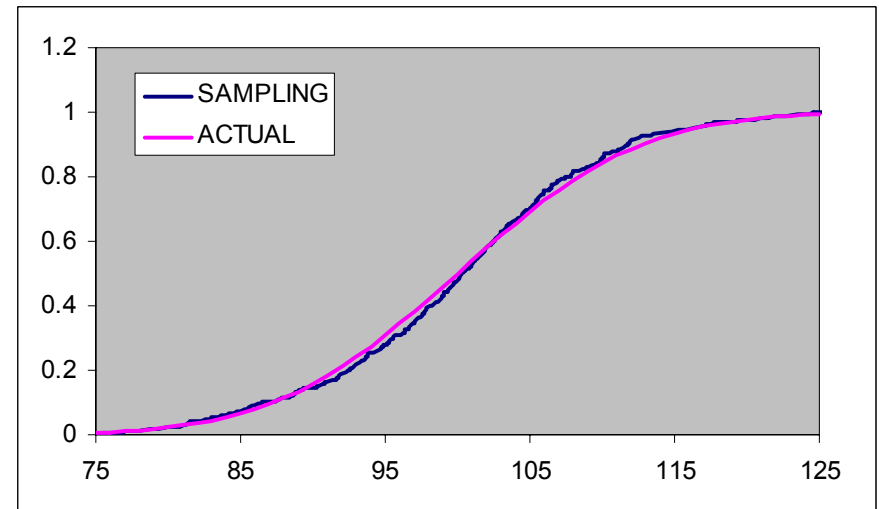
SCENARIO GENERATION

Effect of Small Number of Samples



20 Scenarios

500 Scenarios





SCENARIO GENERATION

Effect of the Number of Samples on Results (Gas in Asia)

