Estimation of Coupled Exponential Distribution using IAs

Generate Samples using the Type II Pareto Distribution

To correspond with the variables using for the Coupled Exponential Distribution the following definitions are used $k = \frac{\sigma}{\kappa}$ and $\alpha = \frac{1}{\kappa}$.

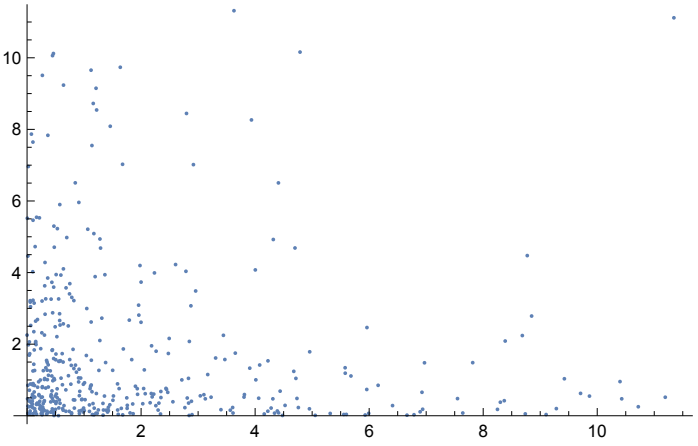
In[80]:=
```
CEDSamples[μ_, σ_, κ_, n_] :=
 RandomVariate[ParetoDistribution[σ/κ, 1/κ, μ], n]

CEDSamples011 = CEDSamples[0, 1, 1, 1000]
```

Plot the pairs

In[82]:=
```
ListPlot[Partition[CEDSamples011, 2]]
```

Out[82]=



Estimate the mean

In[89]:=
```
EstimateCRVMean[CEDSamples011, {}, {}, {},
 "iterations" → ⟨|"iterateXeqX" → 2, "iterateRec" → 10|⟩,
 "saveXeqX" → False]
```

Out[89]=
```
⟨|lowestVariability → {0.492 ± 0.025, 492}, lowestVarNearEnd → {0.53 ± 0.04, 1996},
 firstLast → {{0.5 ± 0.5, 254}, {0.52 ± 0.05, 2466}}, minMax → {{0.5 ± 0.5}, {0.54 ± 0.05}},
 sampleRange → 0.1, allEst → {0.474911, 0.509613, 0.533948,
   0.600344, 0.571211, 0.533623, 0.481496, 0.52066, 0.446783, 0.503839},
 allCombinedEsts → {{0.5 ± 0.5, 254}, {0.492 ± 0.025, 492}, {0.506 ± 0.030, 724},
   {0.53 ± 0.05, 972}, {0.54 ± 0.05, 1252}, {0.54 ± 0.04, 1500}, {0.53 ± 0.05, 1748},
   {0.53 ± 0.04, 1996}, {0.52 ± 0.05, 2224}, {0.52 ± 0.05, 2466}}, XeqX → {}|⟩
```