

Modelling Team Update

30th July

Progress

- Adapted gamma distribution for tumble angle
- Added trace to particles, and to the mean position of the bacteria
- Changed run length calculation heuristic
- Started “Java for Sophies[©]” course

Gamma Distribution

- Previously: approximated by a polynomial function that was fitted to a data series in excel
- Currently: 1000 data points are read in to an array from a text file at run time, and an index is selected at random

Trace

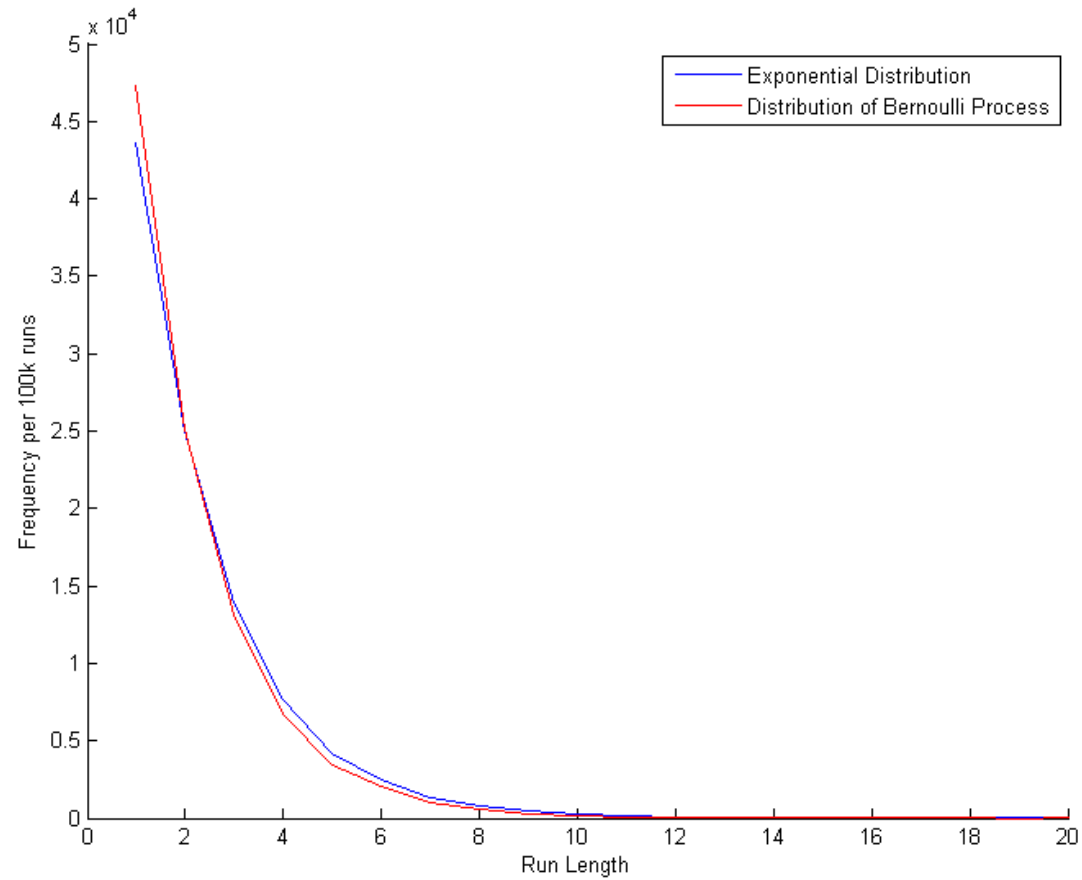
- Lines are drawn between each of a list of points that mark the position of each particle at short intervals through the simulation
- Same thing is done for the mean position of the bacteria, to show the effect of chemotaxis

Run Length Calc

- Previously: run length pre-determined by an exponentially distributed random variable
- Currently: modelled by a Bernoulli Process; at each time step, there is a fixed probability that the run will continue

$$p^u = \frac{1}{2} \quad \Rightarrow \quad p = \left(\frac{1}{2}\right)^{\frac{1}{u}}$$

Run Length Calc



Java for Sophies[©]

- Sophie is expanding her skillset with the help of Ian and Charlie's amateurish 2-on-1 personal tuition

Project Names

- Bacto: The Future
- Bacto Life, Bacto Reality
- Bac Packers Trail
- Bac Billiards
- And finally...

Project Names

