Memo

***11/03/2021***

Question:

1. It seems that there is no decent way to implement “global BOIN”, the “BOIN” package only implement “local BOIN” as the author stated in the article that the intervals have no closed form and practically complicated. I’m not sure if it’s worth implementing by hand or even how to do so.
2. First tried to replicate the result of correct selection for DLT=20% for 3+3 and local BOIN, but the result is a bit different from the result from the original article. I’m using the same parameters as the original article and it seems the 3+3 yields same result while the local BOIN gives different correct selection rate. Calculation in detail is in “Simulation.Rmd”. I will be running for other scenarios and performance metrics, but the simulation takes a long time so the following is just a first try.

Chart, line chart

Description automatically generated *My replicate*

Chart, line chart

Description automatically generated *Original article*

Red: BOIN

Blue: 3+3

1. Avg no. of patients at MTD for 3+3 does not match the original article.
   1. Computation method: CCR P4295
   2. If the remaining patients in 3+3 are considered as being treate at the selected MTD, it should be higher, i.e. 24-30 when MTD us located at low doses (scenario 1-6)
2. Results vary a lot across simulation, tried ntrial = 1000, higher may yield more stable result but takes really long time. Pattern (4 in a group?) is not as clear as in the original paper.