Timescales of capture of a Kinetochore by multiple Microtubules during cell division

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Chromosome pairs are segregated by dynamic microtubules during mitotic cell division. Prior to segregation, a microtubule growing out of a spindle pole body has to first attach to a protein complex called Kinetochore on a chromosome. The search and capture of a kinetochore by many microtubules within the finite cellular geometry, is an interesting first passage problem. In fission yeast the search is done by rotational diffusion of N (~ 1 to 5) microtubules. The problem is reminiscent of a well known problem in stochastic process literature of capture of a lamb chased by multiple lions, except now the available space for diffusion is finite. We study the question of how the typical capture time of the kinetochore (lamb) depends on the number N of the microtubules (lions).