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To make things simpler: classical Powell's ideas for describing bacterial population revisited.

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In 1956, E. O. Powell introduced a novel approach that allowed one to understand the relations between various types of probability distributions used for description of a bacterial population such as interdivisiontime probability distribution or age structure. Since then, numerous other authors extended Powell's ideas by introducing additional complications within the model, e.g., taking into consideration bacterial cell volume, protein concentrations, or more complex metabolic pathways. Recently, an increasing interest in these types of models can be observed because of newly developed methods that allow for observation of a single bacterial cell growth. In my talk, I want to return to the roots and to briefly present a slightly different approach to the Powell's results, which, as I believe, has a didactic value. It turns out that a single probability distribution, easily obtainable using a simple argumentation, is enough to retrieve most of the results that were initially presented in Powell's original work.

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