Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Sorting Category: 04.3 (T)

Modeling curvature-dependent subcellular localization of a small sporulation protein in Bacillus subtilis VAIBHAV WASNIK, Department of Physics, Clark University, NED WINGREEN, Princeton University, RANJAN MUKHOPADHYAY, Department of Physics, Clark University — Recent experiments suggest that in the bacterium, B. subtilis, the cue for the localization of small sporulation protein, SpoVM, that plays a central role in spore coat formation, is curvature of the bacterial plasma membrane. This curvature-dependent localization is puzzling given the orders of magnitude difference in length-scale of an individual protein and radius of curvature of the membrane. Here we develop a minimal model to study the relationship between curvature-dependent membrane absorption of SpoVM and clustering of membrane-associated SpoVM and compare our results with experiments.

[X] Prefer Oral Session
[ ] Prefer Poster Session

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Date submitted: 15 Dec 2011 Electronic form version 1.4