



CEA – Saclay, 91191 Gif-sur-Yvette Cedex
Service de Physique de l'Etat Condensé - UMR 368

VISIO SÉMINAIRE

Mercredi 9 septembre 2020 à 11h15

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The importance of mechanics in bacterial infection through the example of meningococemia

A number of infectious agents, including emerging pathogens and agents responsible for nosocomial infections, reach the blood during infection. Colonization of the bloodstream induces different types of severe pathological consequences such as septicemia and meningitis. Despite the availability of antibiotics these infections resulting in sequels and high death rates remain a major concern in intensive care units and emergency rooms. A better understanding of the mechanisms of disease is a necessary step to the identification of innovative treatments. We study the pathogenesis of *Neisseria meningitidis* (or meningococcus), a Gram-negative bacterium that recapitulates these different pathological effects. This bacterium asymptotically colonizes the human nasopharynx and pathology is initiated when the bacterium crosses the nasopharynx epithelium and reaches the bloodstream where they survive and proliferate associated with vascular wall eventually leading to vascular occlusion. Exploiting a multidisciplinary approach combining microbiology, cell biology, vascular biology and physics we can now provide a detailed view of the pathogenic process as well as ways to block it.

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