

Abstract Submitted
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Multiblock copolymer adsorption on a hydrophobic surface: A Monte Carlo simulation study MAX KOLB, Laboratoire de Chimie, Ecole Normale Supérieure de Lyon, F-69364 Lyon, France, VIRGINIE HUGOUVIEUX, Sciences pour l'Oenologie, INRA, F-34060 Montpellier, France — Dilute solutions of long multiblock copolymers with alternating hydrophilic and hydrophobic segments in contact with a hydrophobic surface have been investigated by Monte Carlo simulation in order to characterize the structure of the adsorption layer. Its properties are determined as a function of the bulk hydrophobicity, the surface hydrophobicity and the monomer concentration. The influence of the copolymer length and its block structure is also investigated. Interesting features appear close to the bulk critical micelle concentration: surface micelles, a secondary surface layer of bulk micelles, depletion effects. Depending on the interaction strengths the surface layer consists of individually adsorbed hydrophobic segments or of surface micelles, at equilibrium with bulk micelles, as found in a previous study of the bulk properties [1]. At higher surface coverage the surface micelles form a regularly spaced layer of hydrophilically connected micellar cores. For sufficiently long copolymers a layer of bulk micelles is hydrophilically attached to the layer of surface micelles.

[1] Hugouvieux, V. et al., *Soft Matter* 7, 2580 (2011)

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