Surface segregation of bimodal suspensions induced by drying

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Summary of presentation :
In complex formulations for coating, it is of importance to control the morphology and the chemical species at the surface after drying. Actually, colloids and molecules located at the surface of the coating may influence for instance adhesion and friction. However the mechanisms responsible for the migration in surface of the particles are complex. Here, we will show on a bimodal colloidal suspension how the morphology of the surface can be controlled by the softness of the particles. We will show that the internal stress generated by drying may influence the surface morphology. Moreover we will see that depletion of colloids can modify the surface morphology but only at large length scale. Lastly we will see that the physico-chemistry of the particles surface does also participate to the selection of the particles that can be observed on the surface of the dried film.