INVITATION TO THE LECTURE

JUNE 1, 2023   9:00   CONFERENCE ROOM

ON THERMODYNAMICALLY CONSISTENT COUPLING OF THE BARCELONA BASIC MODEL WITH HYDRAULIC MODELS FOR UNSATURATED SOILS

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This lecture will be devoted to thermodynamically consistent coupling of hydraulic models with the Barcelona Basic Model (BBM), which is a mechanical model widely used for unsaturated soils. First, the BBM with non-linear poroelasticity and non-associated plasticity will be described in detail. Then a general thermodynamical framework for poroelastoplasticity formulated in terms of the net stress and suction will be introduced and applied to derivation of a consistent hydro–mechanical coupling for the BBM. Finally, it will be shown on a particular model for the bentonite buffer from the FEBEX experiment that the hydraulic model so obtained is not completely physically acceptable and its applicability is limited.