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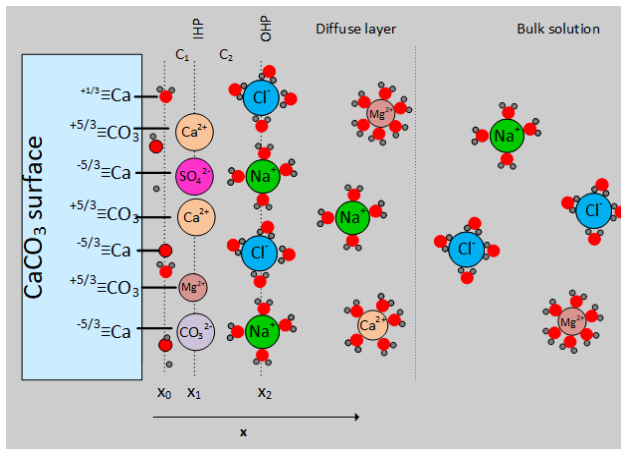
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## Surface complexation models for the calcite-brine and brine-oil interfaces

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AWF 1



Description of the calcite-water interface according to the Charge Distribution Multi-Site Complexation model

Different experimental studies have shown that modifying the injection water composition can improve the oil recovery from carbonate reservoirs. However, concurrent with the lab-work progress, predictive models at pore and core scale are needed to complement the experimental results, and to eventually serve as basis for a robust model for field scale applications. However, the positive effect on the production mainly stems from the interactions that occur at the mineral/brine and brine/oil interfaces. Thus, we first quantify these interactions by using surface complexation modeling. With this thermodynamic approach, we not only infer material balance data, but we can also predict the electrokinetic potential at these interfaces, a parameter that is tightly linked to the wettability, fines release or the mechanical properties of the rock.