

## **Simulating DNA from the electron to the chromosome**

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DNA is a dramatic example of a multi-scale problem, where individual interactions occur in the sub-nanometer scale (the nucleobase), while global effects involve the entire chromatin fiber, which for humans measures 2 meters for each cell. DNA represents then a major challenge for simulation techniques that needs to tackle this multi-scale problem by using multi-physics approaches. I will summarize in my talk our efforts to develop a continuum of methodologies able to capture DNA properties from the electron to the chromosome.