



# **See me, feel me: Combining Optical Tweezers and Single- molecule Fluorescence Microscopy to unravel the Biophysics of DNA**

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## Abstract:

DNA, the carrier of genetic information, is a long polymer. In our cells, a whole machinery of proteins takes care of its packaging, repair, reading and copying. Our goal is to understand the physics behind the processes involved. To this end, we have developed a novel instrument, combining optical tweezers, single-molecule fluorescence and microfluidics, which allows us to manipulate DNA and apply and measure forces (in the piconewton range), to localize and count proteins binding to it (in the tens of nanometers range), and to rapidly switch on and off biochemical reactions.

Here, I will discuss applications of this approach to unravel how DNA complies to tension.

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**Room PH 127**

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