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Statistical properties of DNA in 2 dimensions and in channels

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Linear and circular DNA is deposited on very flat surfaces and its contour is measured by Atomic Force Microscopy. The statistical analysis of the contour of many DNA molecules permit to determine a) the critical exponents governing the end-to-end distance and radius of gyration, b) the shape parameters (asphericity) and c) persistence length. The effect of confinement in 2 dimensions and in narrow channels is discussed. It is also found that, in channels, nicked DNA form hairpins: the biological implications of this effect are discussed.