# Appendix B Field smoothness: FWHM

The full width at half maximum (FWHM) parameter describes the smoothness of 1D random fields. Most precisely, the FWHM specifies the breadth of a Gaussian kernel (Fig.B.1) which, when convolved with uncorrelated (perfectly rough) Gaussian 1D data yields smooth Gaussian 1D fields (Fig.B.2).

Random field theory (RFT) (Adler and Taylor, 2007) uses the FWHM value to describe the probabilistic behavior of smooth fields. The most important probability for classical hypothesis testing is the probability that the random fields will reach a certain height (Friston et al., 2007); setting that probability to $\alpha = 0.05$ yields the critical RFT thresholds depicted in Fig.3 (main manuscript).

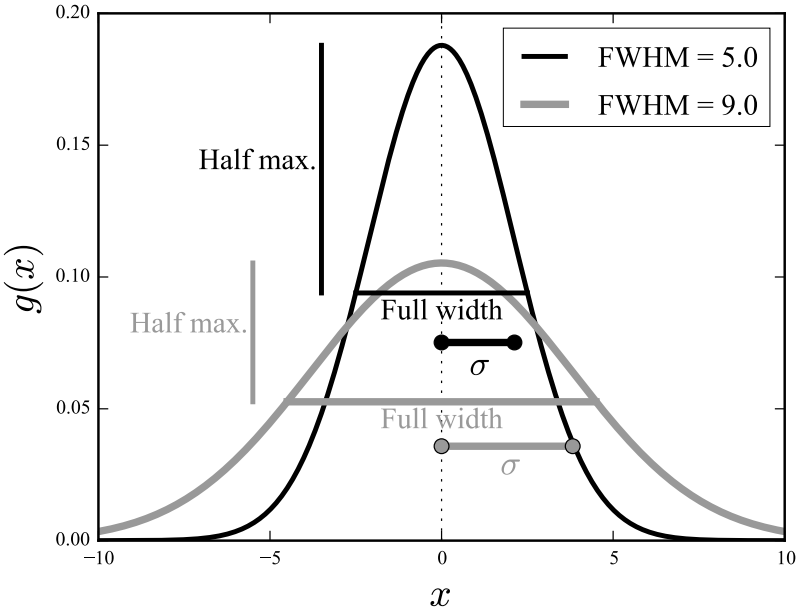


Figure B.1: Breadth parameters for Gaussian kernels: $\sigma$ and FWHM.

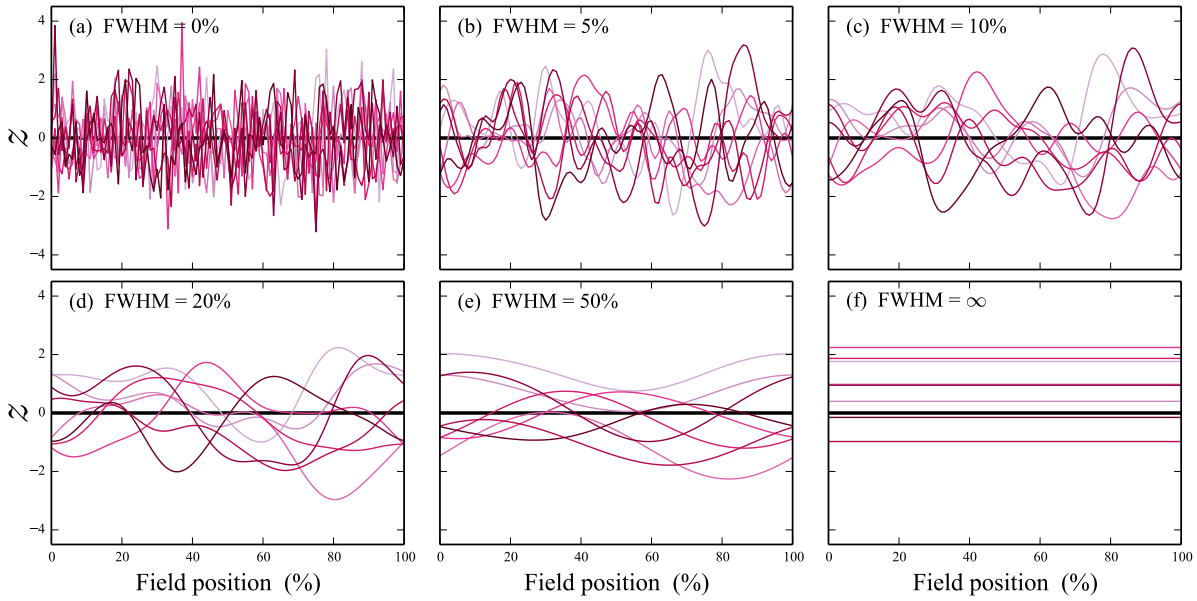


Figure B.2: One-dimensional Gaussian random fields. The FWHM parameterizes field smoothness. The smaller the FWHM the rougher the field, and the more likely random fields are to reach a specified height. Infinitely smooth fields (FWHM=$\infty$) are probabilistically equivalent to 0D scalars. It has been shown that Biomechanics datasets generally tend to lie in the range FWHM = [5%, 50%], including (processed) kinematics, force and processed EMG (Pataky et al., 2016).