



**Spatial profiles of the across-fiber neural correlations.**

The observed spatial profiles (see Figure) show broad regions of correlation between 2 and 3 mm centered on the reference fiber across the entire cochlea. The correlation area, which provides a more global measure of level of correlation (“correlation energy”), clearly decreases towards the base, reflecting the gradual decline of temporal coding with increasing cochlear distance from the apex. The spatial profiles are surprisingly independent of stimulus intensity. Our analysis points towards the importance of monaural neural delays in determining the width of spatial correlation: if monaural delays are not available in the peripheral auditory system, the width of correlation is remarkably invariant with center frequency. If, on the other hand, such delays are available, the spatial profiles are wider and less invariant.