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Scanning near-field optical microscopy based on fiber probes is one of the main two branches of optical scanning probe microscopy techniques. Even if it seems to be overcome by apertureless (scattering) SNOM in recent years, it still has some benefits - low signal to noise ratio, no need of using lock-in techniques or higher harmonics techniques for detection, and probably also higher penetration depth of the volume from which the signal is collected.

Aperture SNOM measurements are hard to be interpreted in presence of more pronounced surface topography. This was probably one of the biggest drawbacks that prevented this technique to be more widely distributed. Using FDTD we can estimate the topography artifacts and interpret the data more reliably.