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Analysis of photoresist sample using single layer curve-fitting:

For a system consisting of a single transparent layer on a transparent substrate the complex reflectivity ratio $r=r_p/r_s$ depends (at fixed angle of incidence) only on the layer dielectric constant and the layer thickness. Near x~ y~ 0 there is little sensitivity to both of these parameters, but the thickness can be accurately determined if a value for the dielectric constant is known. Here we determine both and thickness d (in units of $2\pi/\lambda$). More noise is seen in the dielectric constant around the origin, where the separate determination of both d and dielectric constant becomes impossible. The lower graph shows d determined only from y in regions where y is linear in thickness; the graph uses the experimental average of all determinations of the average layer dielectric constant.