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Open book fibrations of lens spaces and deformations of cyclic quotient singularities.

Let $X = \mathbb{C}^2/\Gamma$ with Γ a cyclic group of order n and $z_1 = x^n \in \mathbb{C}[x, y]$ a Γ-invariant. The link $L = S^3/\Gamma$ of the the cyclic quotient singularity $0 \in X$ is a lens space and $z_1/|z_1|$ yields an open book fibration of L. For a deformation X_t of X, the function z_1 is holomorphic on X_t and we obtain a diffeomorphism from L to a 3-manifold $L_t \subset X_t$. Moreover, L_t is provided with an open-book fibration by the function $z_1/|z_1|$.

We show, that there is a correspondence between the components of the base of the miniversal deformation of X and isotopy classes of such open book fibrations. That means, the different components of the base have a *topological* reason.