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Bruce Olberding* (olberdin@nmsu.edu), Department of Mathematical Sciences, New Mexico State University, Las Cruces, NM 88011, and **Francesca Tartarone** (tfrance@mat.uniroma3.it), Dipartimento di Matematica, Università degli Studi “Roma Tre”, Largo San Leonardo Murialdo 1, 00146 Roma, Italy. *Irreducible components of the closed fiber of a modification of a two-dimensional regular local ring.*

Let D be a two-dimensional regular local ring, and let $\phi : X \rightarrow \text{Spec}(D)$ be a modification (i.e., proper birational morphism) of schemes, where X is normal. By Zariski’s Connectedness Theorem, the closed fiber of ϕ is connected, so that if the fiber is not irreducible, then any irreducible component of the fiber must intersect some other irreducible component of this fiber. We discuss some constraints on where this intersection must occur. This translates into a question regarding when the exceptional prime ideals of a finitely generated birational extension of D are comaximal. Our methods are valuation-theoretic and have application to the problem of classifying the not-necessarily-Noetherian integrally closed rings between D and its quotient field. (Received September 07, 2012)