Flat approximations of surfaces along curves

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We consider a developable surface tangent to a surface along a curve on the surface. We call it an *osculating developable surface* along a curve on the surface. We investigate the uniqueness and the singularities of such developable surfaces. We discover two new invariants of curves on a surface which characterize these singularities. As a by-product, we show that a curve is a contour generator with respect to an orthogonal projection or a central projection if and only if one of these invariants vanishes. We also classify the singularities. This is a joint work with Saki Otani.