

CURVES ON A DOUBLE SURFACE

SCOTT NOLLET AND ENRICO SCHLESINGER

ABSTRACT. Let X be a doubling of a smooth surface F in a smooth threefold and let $C \subset X$ be a locally Cohen-Macaulay curve. Then C gives rise to two effective divisors on F , namely the curve part P of $C \cap F$ and the curve R residual to $C \cap F$ in C . We show that a general deformation of R on F lifts to a deformation of C on X when a certain cohomology group vanishes and give applications to the study of Hilbert schemes of locally Cohen-Macaulay space curves.

1991 *Mathematics Subject Classification.* 14C05,14H50.

Key words and phrases. Hilbert schemes, double surfaces, deformations.