



On the canonical ring of curves and surfaces

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Let C be a curve (possibly non reduced or reducible) lying on a smooth algebraic surface. We show that the canonical ring $R(C, \omega_C)$ is generated in degree 1 if C is numerically 4-connected, not hyperelliptic and even (i.e. with K_C of even degree on every component). As a corollary we show that on a smooth algebraic surface of general type with $p_g(S) > 0$ and $q(S) = 0$ the canonical ring $R(S, K_S)$ is generated in degree ≤ 3 if there exists a curve C in $|K_S|$ numerically 3-connected and not hyperelliptic.

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