A transcendental approach
to injectivity theorem for log canonical pairs

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Abstract. We study a transcendental approach to the cohomology groups of adjoint bundles of log canonical pairs, aiming to establish an analytic theory for log canonical singularities. As a result, in the case of purely log terminal pairs, we give an analytic proof for the injectivity theorem originally proved by Hodge theory. Our method is based on the theory of harmonic integrals and the L^2-method for the $\overline{\partial}$-equation, and it enables us to generalize the injectivity theorem to the complex analytic setting.

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