

Given a flat algebraic connection on a quasi-projective smooth variety over the complex numbers, we construct a pairing between its algebraic de Rham cohomology and the so-called rapid decay homology on the associated analytic space in terms of period integrals and we prove that this pairing is non-degenerate. We will discuss the main idea of the proof which is a local duality result interesting by its own, as well as some applications.