1014-53-1658   **Eduard Chiru*** (`echiru@lima.ohio-state.edu`), Department of Mathematics, Galvin Hall 420F, 4240 Campus Drive, Lima, OH 45804. *Topological remarks on closed orientable cohomogeneity one 4-manifolds via harmonic forms.*

Let M be a closed, orientable cohomogeneity one 4-manifold with two singular orbits. We compute directly the harmonic 2-forms for a family of invariant Riemannian metrics on M for the case when the orbits are orientable and of codimension two. Using topological observations for the other cases, we derive some consequences about the second Betti number and signature of M. (Received September 28, 2005)