1070-32-98 **David B. Massey*** (d.massey@neu.edu), Dept. of Mathematics, Northeastern University, Boston, MA 02115. *What do perverse sheaves tell you about the topology of analytic spaces?*

There are two canonical perverse sheaves associated with the rational constant sheaf on a complex analytic space X: the intersection cohomology complex and perverse cohomology. The (shifted) constant sheaf is isomorphic to its perverse cohomology if and only if the constant sheaf is perverse; in this case, one has all of the cohomological Milnor fiber theory for functions on X. The constant sheaf is isomorphic to intersection cohomology, which is a simple perverse sheaf, if and and only if X is a rational homology manifold; in this case, categorical techniques yield methods for producing new rational homology manifolds which may be very singular. Finally, we look at what it says about the topology of an analytic space when intersection cohomology and perverse cohomology of the constant sheaf coincide. (Received February 01, 2011)