

MERCURY MODEL DEVELOPMENTS FOR REGULATORY PURPOSESA. Voudouri, P. Louka, **G. Kallos***School of Physics, Division of Applied Physics, University of Athens, Athens, Greece*

In the recent years there has been a remarkable interest in mercury as an atmospheric pollutant due to its severe effects on human health and the environment. Two large European research projects initially MAMCS and recently MERCYMS have been focused on investigating the mercury cycle in the atmosphere, understanding its physical and chemical properties and developing integrated atmospheric modelling systems for the description of the individual mercury processes and their interactions with the atmospheric and marine systems. The present study deals with the latest developments of such modelling systems performed within the framework of MERCYMS project. In particular, RAMS and SKIRON/Eta atmospheric modelling systems were used in an attempt to perform sensitivity analysis on the factors that affect transport, transformation and deposition of atmospheric mercury. Emphasis is given in the development of mechanisms describing the wet and dry deposition processes of mercury in the forms of particulate and divalent mercury. The area under consideration is the Mediterranean and Europe. Simulations were performed using a wet deposition scheme based on the scavenging coefficient approach. In addition new dry deposition schemes for reactive mercury and mercury particles, as well as re-emission of mercury from natural sources, namely water and soil surfaces were examined. The present stage of these modelling systems allows us to say that they are useful tools for policy makers in assessing various mercury emission control strategies.