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EUROPEAN VIRTUAL ATOMIC AND MOLECULAR DATA CENTER – VAMDC

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Abstract. Reliable atomic and molecular data are of great importance for different applications in astrophysics, atmospheric physics, fusion, environmental sciences, combustion chemistry, and in industrial applications from plasmas and lasers to lighting. Currently, very important resources of such data are highly fragmented, presented in different, non-standardized ways, available through a variety of highly specialized and often poorly documented interfaces, so that the full exploitation of all their scientific worth is limited, hindering research in many topics like e.g. the characterization of extrasolar planets, understanding the chemistry of our local solar system and of the wider universe, the study of the terrestrial atmosphere and quantification of climate change; the development of the fusion rersearch, etc.

The Virtual Atomic and Molecular Data Centre (http://www.vamdc.eu, VAMDC) is an European Union funded FP7 project aiming to build a secure, documented, flexible and interoperable e-science environment-based interface to existing atomic and molecular data. It will also provide a forum for training potential users and dissemination of expertise worldwide. Partners in the Consortium of the Project are: 1) Centre National de Recherche Scientifique - CNRS (Paris, Reims, Grenoble, Bordeaux, Dijon, Toulouse); 2) The Chancellor, Masters and Scholars of the University of Cambridge – CMSUC; 3) University College London – UCL; 4) Open University – OU; (Milton Keynes, England); 5) Universitaet Wien - UNIVIE; 6) Uppsala Universitet – UU; 7) Universitaet zu Koeln – KOLN; 8) Istituto Nazionale di Astrofisica – INAF (Catania, Cagliari); 9) Queen's University Belfast – QUB; 10) Astronomska Opservatorija - AOB (Belgrade, Serbia); 11) Institute of Spectroscopy RAS – ISRAN (Troitsk, Russia); 12) Russian Federal Nuclear Center - All-Russian Institute of Technical Physics - RFNC-VNIITF (Snezhinsk, Chelyabinsk Region, Russia; 13) Institute of Atmospheric Optics - IAO (Tomsk, Russia); 14) Corporacion Parque tecnologico de Merida – IVIC (Merida, Venezuela); 15) Institute for Astronomy RAS - INASAN (Moscow, Russia).

This review describes the VAMDC project and its objectives.