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## VIII SERBIAN-BULGARIAN ASTRONOMICAL CONFERENCE

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# BOOK OF ABSTRACTS

Eds. Milan S. Dimitrijević and Milcho K. Tsvetkov



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On the front cover: Panorama of the town of Leskovac

On the back cover: A forest on a secret planet, author Vladimir M. Dimitrijević

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## **SERBIAN VIRTUAL OBSERVATORY 2010-2012 AND ITS CONNECTIONS WITH VIRTUAL ATOMIC AND MOLECULAR DATA CENTER (VAMDC)**

**Darko Jevremović<sup>1</sup>, Milan S. Dimitrijević<sup>1,2</sup>, Veljko Vujičić<sup>1</sup>,  
Luka Č. Popović<sup>1</sup>, Vojislava Protić Benišek<sup>1</sup>, Vladimir Benišek<sup>1</sup>,  
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Zoran Simić<sup>1</sup>, Miodrag Malović<sup>5</sup>**

<sup>1</sup>*Astronomical Observatory, Volgina 7, 11060 Belgrade, Serbia*

<sup>2</sup>*Observatoire de Paris, 92195 Meudon Cedex*

<sup>3</sup>*Faculty of Mathematics, Studentski trg 16, 11000 Belgrade, Serbia*

<sup>4</sup>*Institute of Astronomy, Bulgarian Academy of Sciences, Tsarigradsko Shosse 72,  
1784 Sofia, Bulgaria*

<sup>5</sup>*Faculty of Civil Engineering, Kralja Aleksandra Blvd. 73, 11000 Belgrade,  
Serbia*

E-mail: darko@aob.rs

In this lecture we will review the progress in the developments in Serbian Virtual Observatory (SerVO) within 2010-2012 periode, as well as its relation with the European FP7 project: Virtual Atomic and Molecular Data Center - VAMDC.

*Contributed paper*

## **THE EXCESS RELATIVISTIC DENSITY IN THE EARLY UNIVERSE AND ITS EXPLANATIONS**

**Daniela Kirilova**

*Institute of Astronomy and NAO*

E-mail: dani@astro.bas.bg

Recent cosmological data from Big Bang Nucleosynthesis (BBN) (Izotov, Thuan 2010, Aver et al. 2010), Cosmic Microwave Background (Komatsu et al. 2011) and Large Scale Structure observations and the analysis of global neutrino data (Kopp et al. 2011) point to the presence of an additional relativistic density in the early Universe. In this connection we review several possibilities for the