

Field Ionization of Antihydrogen in Rydberg States

```

\documentclass{article}
\addtolength{\textheight}{-10mm}
\addtolength{\topmargin}{-5mm}
\pagestyle{plain}
\def\title#1{\begin{center}#1\end{center}}
\def\author#1{\centerline{\small{\textsc{#1}}}}
\def\address#1#2{\begin{center}\small\emph{#1}\E-mail: \texttt{#2}\end{center}}
\def\refname{{\small References}}
\begin{document}
\title{\textsc{Field Ionization of Antihydrogen in Rydberg States}}
\author{V.-S.-Melezhik}
\address{Bogoliubov Laboratory of Theoretical Physics, \ Joint Institute for Nuclear Research, \
141980 Dubna, Moscow Region, Russia}{melezhik@theor.jinr.ru}
\bigskip
\small
In experiments on antihydrogen formation the ionization of the
antihydrogen atoms in Rydberg states by external fields becomes an actual
problem \cite{Enomoto}.
To analyze the ionization rates we apply the computational scheme
developed earlier for some problems of the muon-catalyzed fusion
such as muon sticking to helium \cite{1} and the stripping of the muon from helium ions
\cite{2,3}. Particularly, deexcitation and ionization rates of highly
excited muonic helium stimulated by strong magnetic field were calculated \cite{2}.
This approach was also used for for analyzing the
laser-stimulated formation of antihydrogen atoms \cite{4}.
Here we suppose to discuss the dependence of the ionization rates of the
antihydrogen from the Rydberg states on the parameters of the external
fields.
\begin{thebibliography}{5}\footnotesize
\bibitem{Enomoto} Y.-Enomoto et. al. Phys. Rev. Lett. {\bf 105} 243401
(2010)
\bibitem{1}V.S. Melezhik, Hyp. Interac. {\bf 101/102}, 365 (1996)
\bibitem{2}
V.S. Melezhik and P. Schmelcher, Phys. Rev. {\bf 59}, 4264
(1999).
\bibitem{3}
V.S. Melezhik, Hyp. Interac. {\bf 138}, 202 (2001)
\bibitem{4}
V.S. Melezhik, Hyp. Interac. {\bf 193}, 329 (2009)
\end{thebibliography}
\end{document}

```

Author: Prof. MELEZHIK, Vladimir (BLTP JINR Dubna)

Presenter: Prof. MELEZHIK, Vladimir (BLTP JINR Dubna)

Track Classification: Antihydrogen