

Abstract Submitted
for the DAMOP15 Meeting of
The American Physical Society

Would Dissociative Recombination of DNA⁺ be a Possible Pathway of DNA Damage?¹ H.C. KWON, Z.P. CHEN, R.A. STROM, V.M. ANDRIANARIJAONA, Department of Physics, Pacific Union College, Angwin, CA 94508 — It is known that dissociative recombination (DR) is one of the very efficient processes of destruction of molecular cations into neutral particles. During the past few years, the focus of DR has been expanded from small inorganic molecules to macromolecular cation [see for instance *Phys. Chem. Chem. Phys.*, 2010,12, 11670-11673]. We are probing the possibility of the DR of DNA⁺ after ionization of DNA, for example due to ionizing radiation. Therefore we are investigating the existence of autoionization states within nucleotide bases (Guanine, Adenine, Cytosine, and Thymine). Our results from computational analysis using the modern electronic structure program ORCA will be presented.

¹Authors wish to give special thanks to Pacific Union College Student Senate for their financial support.

H. C. Kwon
Department of Physics, Pacific Union College, Angwin, CA 94508

Date submitted: 29 Jan 2015

Electronic form version 1.4