

# On the line shape of the total rovibronic absorption in laser-dressed diatomic molecules

Gabor Halász<sup>1</sup>, Tamás Szidarovszky<sup>2</sup>, and Agnes Vibok<sup>1</sup>

<sup>1</sup>University of Debrecen

<sup>2</sup>Eotvos Lorand University

September 30, 2021

## Abstract

Recently, the rovibronic absorption and emission spectra of diatomic molecules dressed by medium-intensity laser fields have been discussed. By computing the total absorption probability as a function of dressing wavelength an asymmetric line shape has been obtained strongly resembling to the well-known Fano line shape. Applying two-state analytical and three-state numerical models the shape of the total absorption probability function is explained. Further confirmation of the model based results is provided by high resolution accurate numerical computations using large number of basis functions.

## Hosted file

paper-Fano-2021-09-21.pdf available at <https://authorea.com/users/438685/articles/539805-on-the-line-shape-of-the-total-rovibronic-absorption-in-laser-dressed-diatom-molecules>