## Binary stars within multipolar planetary nebulae

Krzysztof Gesicki\*<br/>†1 and Albert Zijlstra

<sup>1</sup>Nicolaus Copernicus University – Poland

## Abstract

We undertook a 3D-model analysis of several planetary nebulae which show quite complicated geometries - quadrupolar or even more. The first IFU spectra from an ongoing observing project with ARGUS instrument at ESO were obtained for M 3-38. We present here the spatial and kinematical structure of this nebula and discuss it in the context of indirect evidences of central binary system like: high-velocity extended bipolar outflows, compact dusty inner torus, complex of recombination emission lines near 465 nm.

<sup>\*</sup>Speaker

<sup>&</sup>lt;sup>†</sup>Corresponding author: kmgesicki@umk.pl