

## Shape evolution in Ge, Se, Kr and Sr nuclei within the covariant density functional theory

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### Abstract

A systematic study of the shape evolution in Ge ( $Z=32$ ), Se ( $Z=34$ ), Kr ( $Z=36$ ) and Sr ( $Z=38$ ) isotones for  $N = 70$ , and their neighboring isotones with  $N = 68$  and  $N = 72$  is presented. We use, in this investigation, the covariant density functional theory (CDFT) with the explicit Density Dependent Meson-Exchange (DD-ME2) and Density-Dependent Point-Coupling (DD-PC1) models. The finite range pairing interaction separable in coordinate space which was proposed by Tian et al. has been used to treat the pairing correlations. By investigating structural properties of nuclei under consideration, it is found that  $N = 70$  isotones are, in generally, spheric. Furthermore, the  $N=70$  can be considered as magic number.