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# Coulomb-excitation programme at UWC

The Coulomb-excitation process with the combination of highly-efficient $\gamma$ and particle detector systems present a great tool to study quadrupole collectivity in nuclei and probing
nuclear-structure properties. This process employs the well-known Coulomb interaction and selectively excites collective nuclear states which decay back to the ground state through
$\gamma$-ray transitions. Coulomb-excitation measurements have been carried out by the UWC Coulex group, where various reorientation-effect Coulomb-excitation measurements (RECE) have recently been carried out f
or a systematic study throughout nuclei in the $sd$ shell. This work reports on our new measurements on $Q_S(2_1^+)$ values at iThemba LABS and TRIUMF on ($^{12}C$,$^{20}$ $Ne$,$^{32}$ $S$,$^{36}$ $Ar$ $\quad and \quad$ $^{40}Ar$), which will be presented during this conference. In particular, a solution is proposed for the
striking zig-zag pattern of $Q_S(2_1^+)$ values observed at the end of the $sd$ shell.

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