

Variscan structures in the Upper Palaeozoic rocks of west central Ireland

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Summary

The western half of central Ireland is part of a low strain zone on the northern margin of the Variscan orogen in which the structures in the Upper Palaeozoic 'cover' rocks appear largely to be controlled by ENE-WSW and NNE-SSW trending structures in the Caledonian, and possibly the pre-Caledonian basement.

Preceding the main ductile phase of Variscan deformation, there was an important period of mid-Dinantian faulting which is closely associated with major base metal mineralization. New structural evidence suggests that the main movement on these faults involved an important component of dextral transcurrent shear.

The main ductile deformation, between post-Westphalian and pre-Upper Permian in age, is characterized by kilometric scale open folds and mainly ENE-WSW trending vertical transcurrent ductile-brittle shear zones. The model of deformation is considered to be one of regional, heterogeneous transpression where the main compression, or pure shear component was approximately N-S, and the simple shear component was an ENE-WSW dextral shear. A major NNE-SSW trending sinistral shear zone, the Fergus shear zone, appears to be the western limit of the dextral shear component.