

S₃₈**INFLUENCE OF O-F AND N-F ORDERING ON THE ONE-DIMENSIONAL VERNIER PROCESS IN ANION-EXCESS FLUORITE-RELATED OXYFLUORIDES AND NITROFLUORIDES**

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The structural analysis of some $M_n(F,O)_{2n+1}$ ($M = Y, Zr, U$) and $Zr_n(F,N)_{2n+1}$ fluorite-related microphases has shown that the anions in excess of those in the fluorite type are accommodated by a one-dimensional vernier process, half of the 4^4 anion layers being periodically changed into compacted 3^6 ones. Such a process introduces periodic strains which can be relieved:

- either, in phases containing different anions in equal proportions, by anion ordering (confirmed by valence bond calculations), the larger and more highly charged anions being preferentially located within the 4^4 layers

- or, in phases containing mainly one kind of anions, by the introduction of periodic antiphase boundary planes, so that the 3^6 and 4^4 components occur as strips intergrown in each layer.