Contribution ID: **99** Type: **Talk**

Incommensurate modulated crystal structure of a lillianite homologue 4L-(Pb)4(Cu,Sb)8(Pb,Sb)8Se24

Tuesday, 15 March 2022 09:00 (20 minutes)

The synthetic ^{4}L-$(Pb)_4(Cu,Sb)_8(Pb,Sb)_8Se_{24}$ crystallizes in the superspace group $Cmc2_1(\alpha 00)000$ with a = 4.165 Å, b = 14.085 Å, c = 19.82 Å and the modulation vector q = 0.6882(3) a^*. The mixed Pb/Sb sites are coordinated octahedrally by the Se atoms, almost every third Pb/Sb position is replaced by Cu that prefers a tetrahedral coordination of Se atoms. This phenomenon can be described by a combination of a positional and occupational modulation.

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Session Classification: Advanced Structure Analysis I

Track Classification: Main conference: Structural Chemistry & New crystal structures