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Published paper #1:
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Abstract:
We have investigated the pressure-dependent structural properties of the quasi-one-dimensional metal β-$Na_{0.33}V_2O_5$ at room temperature by high-resolution angle-dispersive powder x-ray diffraction. According to our structural data the crystal lattice of β-$Na_{0.33}V_2O_5$ remains monoclinic (space group $C2/m$) up to 20 GPa. The smallest compressibility is found along the conducting b axis. We observe an anomaly in the pressure dependence of the lattice parameters and the volume of the unit cell in the range 12-15 GPa, in agreement with the pressure-dependent optical properties.