Superstructures in Room-temperature Ordered Deuterides $CeCuSiD_x$ and $CeCuGeD_x$

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Crystallographic superstructures in the deuterides $CeCuSiD_{1.64(5)}$ and $CeCuGeH_{1.15(5)}$ have been characterized by neutron diffraction. Deuterium atoms are inserted in [Ce_3Cu] and [Ce_3Si] or [Ce_3Ge] tetrahedral sites available in the hexagonal ZrBeSi-related structure of these deuterides. A partial but ordered occupancy of these tetrahedra by D atoms induces the occurrence of superstructures along the *c* axis, and the $CeCuXD_y$ structures can be described with a *c* parameter multiplied by 3 and 7 for X = Ge and Si, respectively, in comparison with the *c* parameters of the ZrBeSi-type subcells.

Key words: Superstructure, Ordered Hydride, Intermetallics, Cerium, Neutron Diffraction