Rossi *et al.* Reply: Zegenhagen, Tung, Patel, and Freeland have pointed out[1] that thermal annealings of ultrathin Co/Si interfaces may lead to agglomeration of three-dimensional $CoSi_2$ islands and suggest that the results on the interface coordination detailed in our Letter[2] might be understood as bulk properties of the islands. Our sample preparation consisted of flash annealing (less than 1 sec at 630 °C) of submonolayer and monolayer amounts of Co deposited on Si(111)7×7. Lateral continuity of the films cannot be claimed but the localization of the Co atoms in a two-dimensional interface is clearly deduced from the anisotropy of the measured radial distribution function of Co-Co second-neighbor pairs with respect to the surface normal. The full Co-Co coordination in the interface plane measured by surface extended x-ray-absorption fine structure (SEXAFS) indicates very large islands or rafts with $CoSi_2$ coordination since the measured value averages the coordination numbers of inside and edge atoms of the islands. The lack of Co-Co signal perpendicular to the interface in the submonolayer case indicates the absence of significant three-dimensional clustering. A large anisotropy is also found in the 2–3-layer-thick film: Here the Co-Co coordination perpendicular to the interface is measured at a distance shorter than that parallel to the interface and with a reduced Debye-Waller factor, i.e., higher correlation of perpendicular interatomic motions (Fig. 1). This shows the reduced symmetry of ultrathin $CoSi_2$ layers: The tensile stress in the interface plane due to the lattice mismatch induces a 2.5% vertical relaxation of the distance between the $CoSi_2$ layers. The elastic stress of the pseudomorphic growth is bound to quickly disappear for higher thicknesses. SEXAFS measures would hardly detect it in thick islands, just as x-ray standing-wave analysis (XSW) and ion channeling did not detect it for 5–20-layer-thick $CoSi_2$ films.[3] The criticized[1] statement of our Letter[2] on the interface distance was indeed unintentionally confusing: The elongation of the Co-Si interface perpendicular distance reported in our Letter is in agreement (within the experimental uncertainty) with the XSW results,[3] while the measure of the $CoSi_2$ interlayer compression in the ultrathin three-dimensional pseudomorphic film was reported in our Letter for the first time.

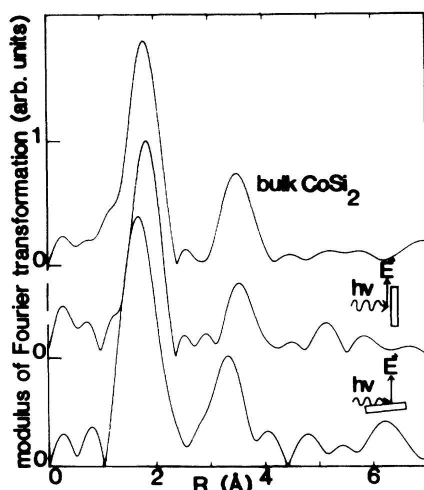

FIG. 1. Magnitude of the Fourier transform of the data for bulk $CoSi_2$ (top) and for the 2–3-layer-thick $CoSi_2$ interface on Si(111) as a function of the x-ray polarization, from Ref. 2. The vertical compression of the interlayer distance due to pseudomorphic growth on the substrate is seen both in the first- (Co-Si) and second-neighbor (Co-Co) distances and in the reduced Debye-Waller damping. This further indicates the true interface sensitivity of these SEXAFS results.

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