Durbin and Gog Reply: We believe that our paper[1] provides strong evidence that the *LVV* Auger spectrum from atoms at the surface of a Si crystal is different from that due to atoms inside the crystal. The difference in spectra from clean and Ge-covered surfaces was evident in the raw data, as well as after deconvolution of the instrument response function (Figs. 2 and 3 of Ref. 1), so the conclusions obviously do not depend on the deconvolution technique.

The deconvolutions presented in the preceding Comment[2] show deviations between the clean and Ge-covered curves extending down to 30 eV, suggesting that the Ge atoms perturb the Si electron yields across a broad spectrum. We suggest that these curves do not correspond to the intrinsic Auger spectra since the energy dependence of the instrument response function has been ignored, in addition to the dependence on Ge coverage. Clearly, a response function measured at 30 eV will be very different from one at 120 eV, due to the energy-dependent excitation of plasmons. In our work, the 90-eV response function was only applied between 75 and 95 eV. Also note that instead of normalizing to the *LVV* peak, a different choice of arbitrary scale factors would diminish the less accurate low-energy deviations and highlight the *LVV* surface effect.

The subtraction of these deconvoluted curves, shown in the inset of Fig. 1 of the Comment,[2] will be extremely sensitive to small energy offsets. It is not clear how the correct energy shift can be determined, so this is a somewhat risky method for demonstrating surface or interface effects in Auger spectra. We do wish to correct the notion that these curves may be evidence for Ge Auger peaks in the neighborhood of the Si *LVV* peaks. Figure 1 shows the same difference spectrum, except that it is calculated from the original data.[1] Above this curve is the Auger spectrum from a clean Ge specimen obtained with the same apparatus. The Ge Auger peak near 45 eV (upper curve) is small but clearly seen in the difference spectrum (lower curve). The peak near 85 eV in the Ge Auger spectrum is clearly much too small to account for the *LVV* structure seen in the difference spectrum.

We agree with the Comment[2] that careful analysis of the experimental data is required to reach meaningful conclusions about electronic states at the surface. In addition to this type of Auger study, more quantitative understanding may be found using techniques which directly probe the surface electronic orbitals, such as photoemission and scanning tunneling microscopy.

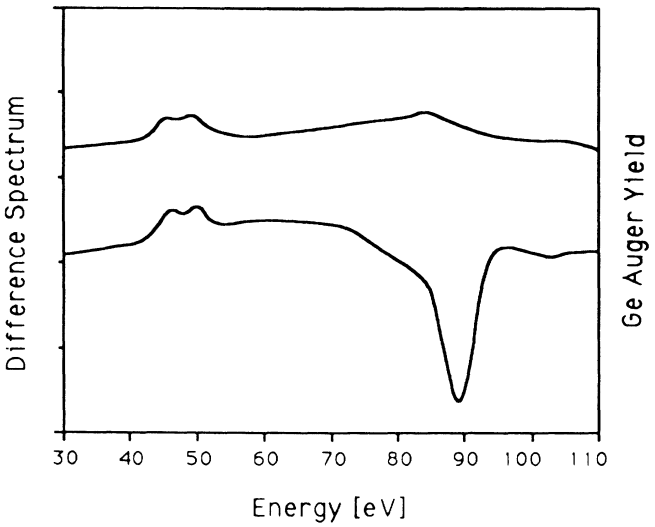

FIG. 1. Lower curve: Difference spectrum from the clean Si surface and the 0.77-monolayer Ge-covered surface, obtained from the data in Ref. 1. Linear backgrounds were subtracted and a normalizing factor was applied to generate a curve with zero area. Upper curve: Auger data from a clean Ge surface, obtained from a bulk Ge crystal. A linear background has been subtracted for clarity.

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[2]V. Contini, C. Presilla, and F. Sacchetti, preceding Comment, Phys. Rev. Lett. **64**, 1844 (1990).