Problem: slip along the San Andreas Fault in 1857 earthquake and earlier.

Carrizo Plain area 1 m DEM representation of B4 data along San Andreas Fault (~380 points)

Study area: central Carrizo Plain—25 cm B4 DEM combined with high resolution balloon platform imagery

Advanced methods for computing offset: profile cross correlation and hydrologically correct DEMs

One basic idea of determining offsets is to assume that the channel was similar in plan shape and cross section before and after the earthquake. These shape and cross-section shapes can then be used to map offset profiles. For example, flow channel 62 (see above) was characterized by a width of 12 m and a depth of 1.5 m. The channel was up to 1.2 m lower than the adjacent alluvial surface. The depth of the channel is a ratio of about 1:3 or is similar to the 1:5-1:7 ratio generally observed.

The problem is that this approach may underestimate the geomorphological elevation which is typically mapped by the offset channels. This is because of the subtle difference of the channel floor before and after the earthquake. A more rigorous approach is to map the total amount of offset prior to the earthquake. This is done and presented in this paper.

For this case, there is evidence for a deviation of about 1 m between the 15-m and 20-m offset channels.

Note also the ALSM scanner parallel to the SAF and the offsets measured.

Conclusions
Considering the implications of the previous discussion, we can state that the channel elements measured in B4 are parallel to the SAF, and the offsets measured in B4 are part of the same deformation event.

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Carrizo Plain—25 cm B4 DEM combined with high resolution balloon platform imagery

Future work
Given the results, efforts need to be continued at SAF and other field sites to better understand the geologic implications of the 1857 earthquake. Continued efforts need to consider the implications of the data and the implications of the geologic implications of the 1857 earthquake. Continued efforts need to be focused on understanding the implications of the geologic implications of the 1857 earthquake. Continued efforts need to be focused on understanding the implications of the 1857 earthquake.