



### Parameters:

Amplitude =  $54.1704 \pm 0.519731$

Mean x =  $3.51695 \pm 0.00541317$

Sigma x =  $0.989424 \pm 0.00705671$

Mean y =  $1.89914 \pm 0.0150996$

Sigma y =  $1.95374 \pm 0.0177029$

Background Scale Value =  $0.242787 \pm 0.00227717$

### Signal Events:

Number of Signal Events =  $658 \pm 10$

Explanation: If we consider each signal event to make up a portion of the signal, then the number of signal events is simply the volume under the gaussian signal. This is defined, per the wikipedia article on Gaussian functions, to be  $2 * \pi * \text{Amplitude} * \sigma_x * \sigma_y$ . For the error I simply took the error of each of these variable quantities and used the appropriate error propagation formula to come to a result.