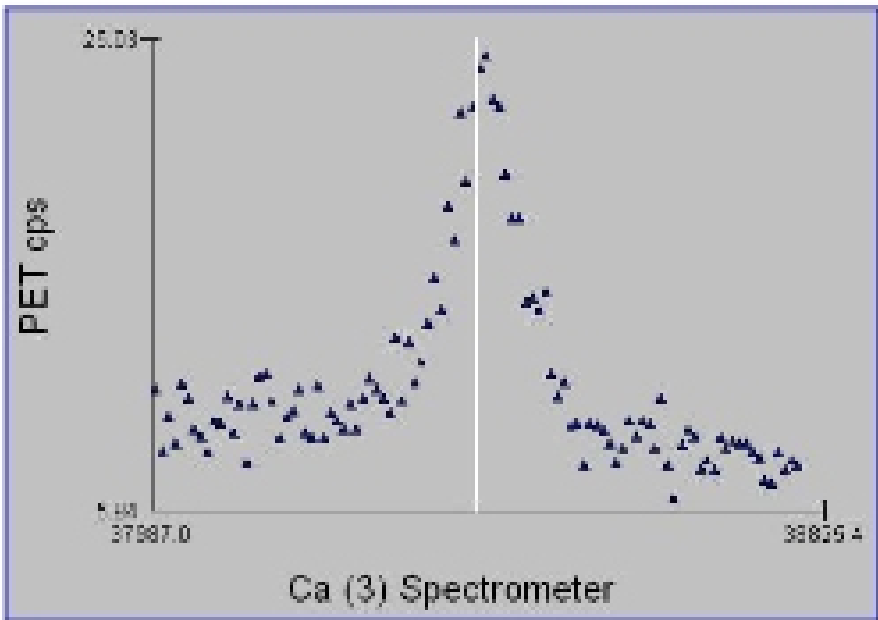
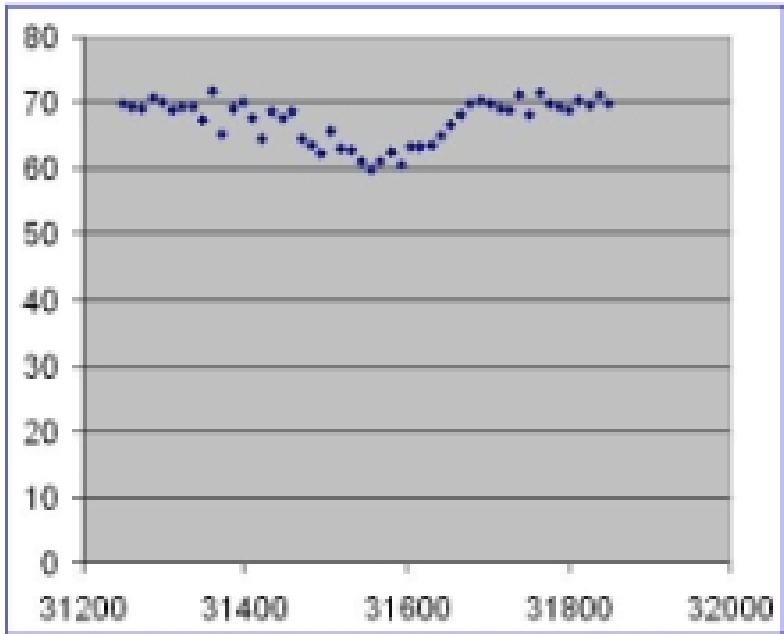




# Electron probe microanalysis EPMA

## Trace Element Analysis





# What's the point?

What's the minimum detection limit for a particular element – or said otherwise, at what point can we be sure that a small inflection above the surrounding background really is a peak?

What kind of confidence level should be placed on such a number?



# Definitions

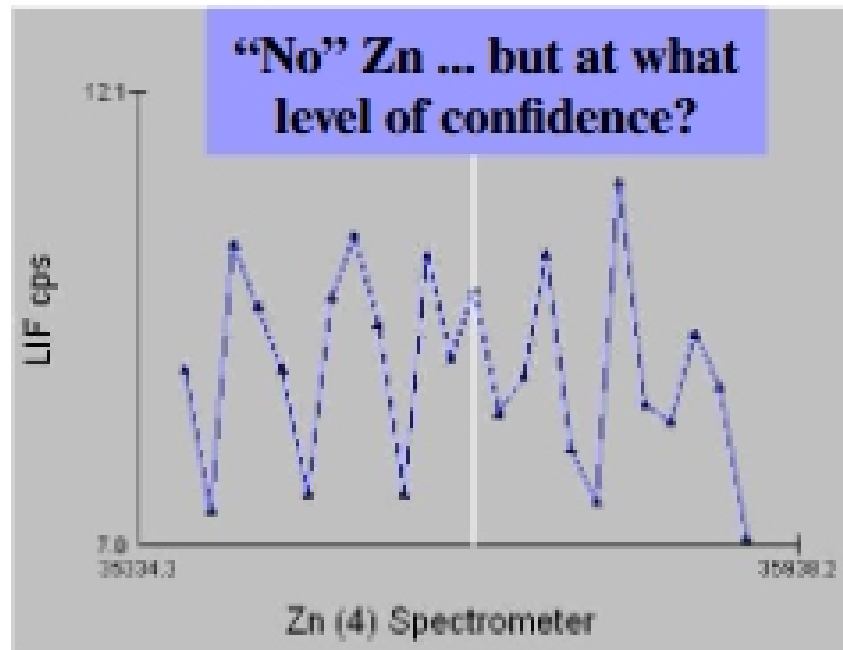
“Generally, WDS can achieve limits of detection of 100 ppm in favorable cases, with 10 ppm in ideal situations where there are no peak interferences and negligible matrix absorption.”

(Goldstein et al., p. 341)

Major >10 wt%

Minor 1-10 wt%

Trace <1 wt%



wt%	ppm
100	1000000
10	100000
1	10000
0.1	1000
0.01	100
0.001	10
0.0001	1