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principle of the instrument

- degradation over time and effects of degradation
 - transient behaviour
 - zero transmission
 - dead time
- summary





SolACES – principle of the instrument





SolACES – spectrometer principle





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degradation over time





channeltron degradation effect

- surface is charged with electrons through high voltage(HV)
- due to degradation of the internal resistor, sufficient surface charging cannot be obtained
- result: less electrons available for multiplication
- degradation dependent on accumulated count rates
- complex degradation over time





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correction of the transient channeltron behaviour





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defining zero transmission

- zero transmission is calculated from corrected absolute minima spectra (2009/233)
- zero transmission is base for calculation of degradation





analysing zero transmission





degradation visible over time and at strong lines





degradation correction via zero transmission





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correction of dead time





correction of dead time – version 1, filter transmission





correction of dead time – version 2, FWHM





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summary

- we can correct the spectral response of the transient behaviour
- we can calculate the dead time in several ways
- we found a way to correct the degradation of the instrument via the zero transmissions



Thank you for your attention

