How to build a LAMPASPALMSATOFMSSPLAT

Achim Trimborn, AeroMegt GmbH
User meetings

2005 business trip to PSI (Switzerland)

➔ User meeting 2006: Doug presents:

Katharina
User meetings

2007 FACSS (Memphis, USA) (invited talk for Doug)

➔ User meeting 2008: Doug presents:

Franziska
User meetings

Feb. 2010 business trip to Aerodyne (Billerica, USA)

User meeting 2010 Doug did not present:
Who is the father?
Thoughts

Marc Gonin
Thoughts
Setup
scattering laser:
  diode laser $\lambda = 808 \text{ nm} / 4.2 \text{ W}$
  beam width $d \approx 1\text{mm}$

ionization laser:
  excimer laser $\lambda = 193 / 248 \text{ nm} / 12 / 20 \text{ mJ per pulse}$
  pulse frequency up to 250 Hz
  beam width $0.3 \text{ mm} \times 0.6 \text{ mm}$
  intensity $\sim 10^9 \text{ W/cm}^2$

trigger modes:
- just second scattering laser
- both scattering lasers
- free fire

mass spectrometer:
  TOFWerk BTOF
  bipolar time of flight mass spectrometer
  $m/\Delta m = 600 - 800$

physical dimensions: smaller than
  $80 \text{ cm} \times 80 \text{ cm} \times 100\text{cm}$

weight: $\sim 140 \text{ kg}$
How to build a LAAPTOF

Laser Ablation of Aerosol Particles Time Of Flight mass spectrometer

Achim Trimborn, AeroMegt GmbH
Future ??