

# Subject Index

## A

- Aerial spray nozzle, 4
- characterization, 142
- Atomization, 67
- electrostatic, 9

## B-C

- Berglund-Liu generator, 19
- Bimodal distribution function, 93
- Calibration, 1-2, 9
- Fraunhofer diffraction, 47
- phase-Doppler particle analyzer, 30

## D

- Diffraction sizemetry, 246
- Discrete location, 238
- Drop diameter, 30
- Droplet number density, 151
- Droplet sizing interferometry, 151
- Droplet spectrum measurement, 142
- Drop size
  - burning and nonburning spray, 209
  - fan spray, 246
  - measurement, 19
  - method of moments, 60
  - standardization and calibration of measurements, 9
  - time-resolved measurements, 209
- Drop-size distribution
  - droplet mean diameter and, 93
  - fan nozzle, 238
  - forward-scattering spectrometer probe, 115
  - Fraunhofer diffraction technique, 47
  - interferometry, 151
  - method of moments, 60
  - phase-Doppler measurement, 170, 193
  - scattered-light scanner, 67
  - small-angle scattering, 77
  - vaporization and turbulence effects, 225

## E

- Electron characteristics, forward-scattering spectrometer probe, 115
- Electrostatic atomization, 9
- Ensemble light-scattering/polarization ratio technique, 93
- Ethanol droplets, 19

## F

- Fan nozzle, drop-size distribution, 238
- Fan spray, laser diffraction and phase-Doppler instruments, 246
- Flash photography, aerial spray nozzle characterization, 142
- Focus discrimination, 128
- Forward-scattering spectrometer probe, 3, 115
- Fraunhofer diffraction technique, 47
- Frequency shift, 170

## I-J

- Image processing, 128
- Imaging probe, 142
- Interferometry
  - droplet sizing, 151
  - phase-Doppler, 93, 170
- Jet breakup, 9, 30

## L

- Laser diffraction, 47
- Laser-Doppler anemometry, 193
- fan spray, 246
- Laser-Doppler velocimeter, 47, 151
- Laser imaging probe, 238
- Laser light scattering, 19, 142
- Laser small-angle scattering instrument, 77
- Light scattering, 19, 60, 67
- Local drop number density, 209
- Log-normal distribution function, 93

**M-N**

Maximum entropy formalism, 193  
 Method of moments, particle sizing, 60  
 Monomodal distribution function, 93  
 Morphology dependent resonances, 19  
 Multiple drop-size droplet generator, 30  
 Nonspherical particles, analysis, 128  
 Number mean diameter, 170

**O**

Off-axis and on-axis collection, 151  
 Optical characteristics, 60  
   forward-scattering spectrometer probe, 115  
 Optical particle counter, 115  
 Optical single-particle analyzers, 3-4  
 Optical tomography, 47

**P-R**

Particle concentration, 77  
 Particle-size distribution, *see* Drop-size distribution  
 Phase-Doppler anemometry, 193  
 Phase-Doppler instruments, fan spray, 246  
 Phase-Doppler interferometry, 93, 151  
   sensitivity to user-controlled settings, 170  
 Phase-Doppler method, swirl-stabilized spray flame, 209  
 Phase-Doppler particle analyzer, calibration, 30  
 Phase-Doppler velocimeter, 225  
 Phase shift, 151  
 Photodetector array, 77  
 Photomultiplier tube voltage, 170  
 Polarization ratio, 93  
 Pressure swirl atomizer, 225  
 Probability distribution function, 93  
 Rayleigh breakup, 30

**S**

Sauter mean diameter, 170  
   scattered-light scanner, 67  
   size distribution effect, 93  
 Scattered-light scanner, 67  
 Shape characterization, 128  
 Signal visibility, 151  
 Small-angle scattering, drop-size distribution, 77  
 Small-droplet spray measurements, 67  
 Spray diagnostics, 2-3; *see also* Drop-size distribution; Velocity distribution  
 Spray measurement, 4-5  
   instruments, 30  
 Spray modeling, 193  
 Standardization, 1-2, 9  
 Sweep, 238  
 Swirl-stabilized spray flame, 209

**T**

Through-valve boom atomizer, 142  
 Time-resolved measurements, drop size and velocity, 209  
 Turbulence, 170  
   drop-size and velocity distribution effect, 225  
 Two-phase flow, 170, 209, 225

**V-W**

Vaporization, drop-size and velocity distribution effect, 225  
 Velocity  
   fan spray, 246  
   time-resolved measurements, 209  
 Velocity distribution, 193  
   vaporization and turbulence effects, 225  
 Volume flux, 170  
 Water spray, low-pressure, 193  
 Wind tunnel, 142, 225