

## Curriculum Vitae

**YEFIM L. KOGAN**

### **Education**

M.S. in Theoretical Physics, Moscow University, Moscow, USSR, 1970.

Ph.D. in Atmospheric Science, Central Aerological Observatory, Moscow, USSR, 1980.

### **Professional experience**

2016-Present, Senior Research Scientist, NorthWest Research Associates, Redmond, WA.

1996-2015, Senior Research Scientist, Cooperative Institute for Mesoscale Meteorological Studies, University of Oklahoma, Norman, OK.

1997-2015, Research Professor, School of Meteorology, University of Oklahoma

1996-1997, Adjunct Professor, School of Meteorology, University of Oklahoma

1992-1996, Adjunct Associate Professor, Adjunct Professor (since 1996), School of Meteorology, University of Oklahoma

1988-1996, Research Scientist, Cooperative Institute for Mesoscale Meteorological Studies, University of Oklahoma, Norman, OK.

1975-1981, Head, Numerical Modeling Group, Department of Atmospheric Dynamics and Cloud Physics, Central Aerological Observatory, Moscow, USSR.

1973-1975, Research Scientist, Department of Radar Meteorology, Central Aerological Observatory, Moscow, USSR.

1970-1973, Senior Programmer/Analyst, Institute for Management Information Systems, Moscow, USSR.

### **Contributions to training**

#### **Students advised:**

Masha Kiezel	M.S. 1980. The effect of turbulent diffusion on the convective cloud dynamics
Mikhail Permiakov	M.S., 1980. Parameterization of the cloud droplet condensation growth in numerical models
Fu Shen Zhen	M.S. 1991. Spectral diffusion of the solution of the condensational growth equation in an Eulerian framework.
Jeff Castle	NSSL REU program, 1994. Trajectory analysis of air parcels in stratocumulus cloud layers.
Seong Soo Yum	M.S., 1995. Parameterization of water-soluble component of aerosol particles in numerical cloud models.
David Lam	M.S, 1996. Microstructure of stratocumulus clouds based on observations from ASTEX and MAST experiments.

- Marat Khairoutdinov PhD, 1999: Parameterization of drizzle formation in marine boundary layer stratocumulus clouds.
- Mikhail Ovtchinnikov PhD, 1999: Investigation of ice production mechanisms using a 3-D cloud model with explicit formulation of ice and liquid phase microphysics.
- Qingfu Liu PhD, 1999: Modeling of the aerosol-cloud interactions in marine stratocumulus cloud layers.
- Yuriy Shprits M.S., 2000, The effect of sea-salt aerosols on stratocumulus cloud microstructure and drizzle
- Alexei Belochitski M.S., 2002: Cloud Microphysics Parameterization of Warm Rain Clouds Based on Full Moments of the Drop Spectra
- Aaron Botnick National Weather Center REU Program, 2005, Variability of Radar Reflectivity in Continental Boundary Layer Stratocumulus
- Danielle Corrao M.S., 2008. The Role of Dataset Selection in Model Verification and Cloud Parameterization Development
- Kityan Choi M.S. Intern, 2012, Effects of Sea-Salt Aerosols on Precipitation in Simulations of Shallow Cumulus

## Publications

Over 110 publications (including one book) on numerical modeling, theoretical physics, and computer science, most notable:

- Kogan, Y. L., D. B. Mechem, 2016: A PDF-Based Formulation of Microphysical Variability in Cumulus Congestus Clouds. *J. Atmos. Sci.*, **73**, 167-184.
- Nelson, K. J., D. B. Mechem and Y. L. Kogan, 2016: Evaluation of warm-rain microphysical parameterizations in mesoscale simulations of the cloudy marine boundary layer. *Mon. Wea. Rev.*, 2137–2154
- Kogan, Y. L., D. B. Mechem, 2014: A PDF based microphysics parameterization for shallow cumulus cloud. *J. Atmos. Sci.*, **71**, 1070-1089.
- Kogan Y.L., 2013: A Cumulus Cloud Microphysics Parameterization for Cloud-Resolving Models. *J. Atmos. Sci.*, **70**, 1423-1436.
- Kogan, Y.L. and A. Belochitski, 2012: Parameterization of Cloud Microphysics Based on Full Integral Moments, *J. Atmos. Sci.*, **69**, 2229-2242.
- Kogan, Y. L., D. B. Mechem and K. Choi, 2012: Effects of Sea-Salt Aerosols on Precipitation in Simulations of Shallow Cumulus, *J. Atmos. Sci.* **69**, 463-483.
- Mechem, D. B., Y. L. Kogan, D. Shultz, 2010: Large Eddy Observation of Post-frontal Continental Stratus. *J. Atmos. Sci.* **67**, 3368-3383.
- Mechem, D. B., Y. L. Kogan, D. Shultz, 2010: Large Eddy Simulations of Post-frontal Continental Stratus. *J. Atmos. Sci.* **67**, pp. 3835-3853.
- Kogan, Y.L., Z. N. Kogan, and D. B. Mechem, 2009: Fidelity of Analytic Drop Size Distributions in Drizzling Stratiform Clouds Based on Large-Eddy Simulations, *J. Atmos. Sci.*, **66**, 2335–2348.

- Mechem, D.B. and Y.L. Kogan, 2008: A bulk parameterization of Giant CCN, *J. Atmos. Sci.*, **65**, 2458-2466.
- Mechem, D. B., Y. L. Kogan, M. Ovtchinnikov, A. B. Davis, K. F. Evans, and R. G. Ellingson, 2008: Multi-dimensional longwave forcing of boundary layer cloud systems. *J. Atmos. Sci.*, **65**, 3963–3977.
- Kogan, Y.L., 2006: Large eddy simulation of air parcels in stratocumulus clouds: timescales and spatial variability. *J. Atmos. Sci.*, **63**, 952–967.
- Liu, Q., Y.L. Kogan, D.K. Lilly, D.W. Johnson, G.E. Innis, P.A. Durkee, K. Nielson, 2000: LES modeling of ship track formation and its sensitivity to boundary layer structure. *J. Atmos. Sci.*, **57**, 2779-2791.
- Ferek, R. J., T. Garrett, S. Strader, K. Nielsen, G. E. Innis, J. P. Taylor, A. S. Ackerman, Y. Kogan, Q. Liu, B. A. Albrecht, D. Babb, 2000: Drizzle Suppression in Ship Tracks. *J. Atmos. Sci.*, **57**, 2669-2681.
- Ovtchinnikov, M. and Y. L. Kogan, 2000: An investigation of ice production mechanisms using a 3-D cloud model with detailed microphysics. Part I: Model description. *J. Atmos. Sci.*, **57**, 2989-3003.
- Ovtchinnikov, M., Y. L. Kogan, and A. M. Blyth, 2000: An investigation of ice production mechanisms using a 3-D cloud model with detailed microphysics. Part II: 9 August 1987 case study. *J. Atmos. Sci.*, **57**, 3004-3020.
- Ovtchinnikov, M., and Y. L. Kogan, 2000: Retrieval of cloud liquid water profile in stratiform clouds from radar reflectivity measurements: algorithm assessment using large-eddy simulations, *J. Geophys. Res.*, **105**, No. D13, 17,351-17,359.
- Khairoutdinov, M. F. and Y. L. Kogan, 1999: A Large Eddy Simulation Model with Explicit Microphysics: Validation Against Aircraft Observations of a Stratocumulus-Topped Boundary Layer. *J. Atmos. Sci.*, **56**, 2115-2131
- Khairoutdinov, M. and Y. L. Kogan, 2000: A new cloud physics parameterization for large-eddy simulation models of marine stratocumulus. *Mon. Wea. Rev.*, **128**, 229-243.
- Liu, Q., Y. L. Kogan, D. K. Lilly, M. P. Khairoutdinov, 1997: Variational optimization method for calculation of cloud drop growth in an Eulerian drop-size framework, *J. Atmos. Sci.*, **54**, 2493-2504.
- Kogan, Y. L. and A. Shapiro, 1996: The Simulation of a Convective Cloud in a 3-D Model with Explicit Microphysics. Part II: Dynamical and Microphysical Aspects of Cloud Merger. *J. Atmos. Sci.*, **53**, 2525-2545.
- Kogan, Y. L., M. P. Khairoutdinov, D. K. Lilly, Z. N. Kogan, and Q. Liu, 1995: Modeling of stratocumulus cloud layers in a large eddy simulation model with explicit microphysics. *J. Atmos. Sci.*, **52**, 2923-2940.
- Kogan Y.L., and W. J. Martin, 1994: On parameterization of bulk condensation in numerical cloud models. *J. Atmos. Sci.*, **51**, 1728-1739.
- Kogan Y. L., 1993: Drop size separation in numerically simulated convective clouds and its effect on warm rain formation. *J. Atmos. Sci.*, **50**, 1238-1253
- Kogan Y.L., 1991: The Simulation of a Convective Cloud in a 3-D Model with Explicit microphysics. Part I: Model description and sensitivity experiments. *J. Atmos. Sci.*, **48**, 1160-1189.