

Syllabus for MODTRAN6 Training

Tuesday, 16 May 2017

8:00 am	Registration/Breakfast
8:30 am	Introductions and Set Up
8:50 am	MODTRAN Band Model Transmittance Lecture
10:00am	Break
10:20 am	MODTRAN6 GUI and a Thermal Test Case
12:20 pm	Lunch
1:20 pm	MODTRAN6 GUI and a Thermal Test Case (cont'd)
3:00 pm	Break
3:20 pm	MODTRAN Correlated-k Lecture
5:00 pm	Adjourn

Wednesday, 17 May 2017

8:00 am	Breakfast
8:30 am	A Solar Test Case
10:00 am	Break
10:20 am	A Solar Test Case (cont'd)
12:20 pm	Lunch
1:20 pm	MODTRAN Radiance and Multiple Scattering Lecture
3:00 pm	Break
3:20 pm	MODTRAN Radiance and Multiple Scattering Lecture (cont'd)
5:00 pm	Adjourn

Thursday, 18 May 2017

8:00 am	Breakfast
8:30 am	An Aerosol Test Case and the Aerosol Generator Toolkit
10:00 am	Break
10:20 am	An Aerosol Test Case and the Aerosol Generator Toolkit (cont'd)
12:20 pm	Lunch
1:20 pm	MODTRAN6 API Examples
3:00 pm	Break
3:20 pm	MODTRAN6 Line-By-Line Lecture
5:00 pm	Adjourn

Friday, 19 May 2017

8:00 am	Breakfast
8:30 am	Radiosonde Test Case
10:00 am	Break
10:20 am	Radiosonde Test Case (cont'd)
11:30 am	Questions/Discussion
Noon	Adjourn



Instructors

Dr. Alexander Berk
Spectral Sciences, Inc. (SSI)

Education

Ph.D.	(Physical Chemistry)	University of North Carolina, 1983
B.S.	(Chemistry/Mathematics)	Harvey Mudd College, 1978

Experience

Dr. Berk joined Spectral Sciences, Inc. (SSI) in 1986. In his current role of Principal Scientist, he has served as principal investigator or project manager on many of the SSI radiative transport (RT) projects. His research activities have concentrated on the modeling of atmospheric absorption, scattering, radiance, flux, refraction and remote sensing phenomena in the infrared, visible, and ultraviolet spectral regions. This work has greatly enhanced the accuracy of band model RT and resulted in algorithms that are now standard in AFRL codes. He has served as the lead developer of the MODTRAN atmospheric RT model since its inception over 30 years ago. Most recently, he developed a novel line-by-line capability for MODTRAN and designed an approach for introducing polarimetric signature prediction into the model. Previously, Dr. Berk developed the RT algorithms in MCScene, SSI's state-of-the-art 3D simulation software for generating synthetic hyperspectral images using Direct Simulation Monte Carlo (DSMC) photon tracking based on MODTRAN-derived optical data.

Timothy Perkins
Spectral Sciences, Inc. (SSI)

Education

M.Eng.	Electrical and Computer Engineering	University of Louisville, 2000
B.S.	Electrical Engineering	University of Louisville, 1999

Experience

Mr. Perkins is a Principal Scientist at Spectral Sciences, Inc. (SSI), where his research activities concentrate on the development of novel image processing and radiometric modeling techniques relevant to remote sensing applications, specifically in the domains of: atmospheric retrieval and compensation, spectral signature analysis, spectral image compression, sensor characterization, and image classification. His efforts include projects related to atmospheric radiative transport, where he currently leads the software development for several of the hyperspectral/multispectral image analysis codes at SSI, including FLAASH-R, an automated implementation of the FLAASH atmospheric correction algorithm, and FLAASH-E, a similar code for operation in the thermal-emissive regime. These projects encompass both performance and scientific enhancements to the atmospheric correction process. Mr. Perkins implemented the current MODTRAN interface and developed the MODTRAN API. He also serves as the technical lead for ongoing research in the field of spectral data compression, and as the lead developer of the QUID (QUick Image Display) signature analysis code, which produces radiometric 3D simulations of physically attributed target models.



Places to stay near SSI:

[Candlewood Suites](#) 0.4 miles from SSI
130 Middlesex Turnpike Typical Rate: \$109
Burlington, MA 01803
(781) 229-4300

[Marriott Residence Inn](#) 4.5 miles from SSI
300 Presidential Way Logan Express
Woburn, MA 01801 Typical Rate: \$249
(781) 376-4000

[Sonesta ES Suites](#) 1.4 miles from SSI
11 Old Concord Rd. Free shuttle to SSI
Burlington, MA 01803 Typical Rate: \$129
(781) 221-2233 / (800)
238-8000

[Marriott Courtyard, Woburn](#) 4.5 miles from SSI
240 Mishawum Rd. Typical Rate: \$149
Woburn, MA 01801
(781) 932-3200

[Marriott, Burlington](#) 2 miles from SSI
Rt. 128 & 3A Mall Rd. Typical Rate: \$179
Burlington, MA 01803
(781) 229-6565

[Crowne Plaza Boston/Woburn](#) 4.7 miles from SSI
15 Middlesex Canal Typical Rate: \$209
Park Rd.
Woburn, MA 01801
(781) 935-8760

[Hyatt Summerfield Suites Hotel](#) 2.3 miles from SSI
2 Van de Graaff Dr. Typical Rate: \$179
Burlington, MA 01803
(781) 270-0800

[Extended Stay America Hotel](#) 4.7 miles from SSI
831 Main St. Typical Rate: \$159
Woburn, MA 01801
(781) 938-3737

[Bedford Plaza Hotel](#) 3.4 miles from SSI
340 Great Rd. Typical Rate: \$119
Bedford, MA 01730
(781) 275-6700

Getting to SSI:

[*Google Maps link to SSI*](#)



Directions from Logan Airport:

Take I-93 North to I-95 South. I-95 is also Route 128.

Take exit 32 off I-95. You will be on a service road. Take the first ramp to Middlesex Turnpike. The Burlington Mall will be to the right. Go right at the bottom of the ramp. The left-turners have a light; you have a Yield sign.

Fourth Avenue is about a mile up Middlesex, at the fourth light, where we do not count the light avoided by the right turn at the end of the ramp.

Turn left on Fourth Ave. SSI is in the first building on the right. Turn into the drive before you would pass the "2-4" sign out front. Park in front. The main entrance is the leftmost of the two entrance arches.

If you are approaching from the South on I-95 North, take exit 32, you will be on a service road, take the 2nd ramp to Middlesex Turnpike and go right at the end of the ramp. Directions are as above, except you will pass through one more set of lights - again, not counting the light for left-turners at the end of the ramp.