



Computational light scattering (PAP315)

Lecture 8b

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What you need for installing and running MSTM



- Linux/Mac/Windows+MSYS2 with GCC gfortran compiler
- GNU make tool



- Go to <http://www.eng.auburn.edu/~dmckwski/scatcodes/>
- Get package by downloading the zip from the page
 - `wget`
<http://www.eng.auburn.edu/~dmckwski/scatcodes/mstm%20v3.0.zip>
- Unzip the package and compile:
 - `gfortran -c mpidefs-serial.f90 mstm-intrinsics-v3.0.f90 mstm-modules-v3.0.f90`
 - `gfortran -o mstm -O1 *.o mstm-main-v3.0.f90`
- Get simplified input file `mstm-input.inp` from the course web page



- All parameters are given in input file, and the input file name will be given as option in the command line `./mstm mstm-input.inp`

Input file template:

```
number_spheres
7
sphere_position_file
at_bottom
output_file
mstm_out.dat
run_print_file
```

```
length_scale_factor
1.0d0
fixed_or_random_orientation
1
min_scattering_angle_deg
0.0d0
max_scattering_angle_deg
180.d0
delta_scattering_angle_deg
1
```

```
sphere_sizes_and_positions
1.0d0  0.0d0  0.0d0      0.0d0  2.2d0  0.0d0
1.0d0  2.0d0  0.0d0      0.0d0  2.2d0  0.0d0
1.0d0 -2.0d0  0.0d0      0.0d0  2.2d0  0.0d0
1.0d0  1.0d0  1.73206d0  0.0d0  2.2d0  0.0d0
1.0d0 -1.0d0  1.73206d0  0.0d0  2.2d0  0.0d0
1.0d0  1.0d0 -1.73206d0  0.0d0  2.2d0  0.0d0
1.0d0 -1.0d0 -1.73206d0  0.0d0  2.2d0  0.0d0
end_of_options
```