Test zFunction

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# Purpose

Test that zFunction is correctly calculated in in FastPlume.

zFunction calculates the vertical dependence of concentration and dosage and included reflections from the surface and from the top of the mixing layer.

# Files

|  |  |
| --- | --- |
| File | What it tests |
| test\_zFunction\_module.csv | Module test for zFunction |
|  |  |
|  |  |

# How Tests were Made

Files were created by Steve’s program zfunction.py.

## test\_zFunction\_module.csv

For selected combinations of zrcp, zplume, hml, and sigz:

Calculate zFunction(zrcp, zplume, hml, sigz)

**Sample from test\_zFunction\_module.csv**



# How to Test FastPlume

## test\_zFunction\_module.csv

**Inputs:**

* Use zrcp, zplume, hml, and sigz

**Expected results:**

* Calculate the zFunction(zrcp, zplume, hml, sigz).
* These should match the values in the files to within a tolerance of 1.0E-6.

**Notes:**

2/9/2024, Steve changed the definition of zFunction to more properly consider where zplume and zrcp are compared to hml.

See zfunct.py for the latest version of the routine

See Equation for “Battelle Batch Runs.doc” for details.