

Astrodynamics.jl

**AN OPEN-SOURCE FRAMEWORK FOR
INTERACTIVE HIGH-PERFORMANCE
MISSION ANALYSIS**

HELGE EICHHORN – OSCW 23/11/2017



<https://github.com/helgee/oscw-2017>

What implicit assumptions
are holding us back?

Reusable

New Shepard

Space Shuttle



Affordable



Orbital



LOL, NOPE.

Interactive



MATLAB
Python

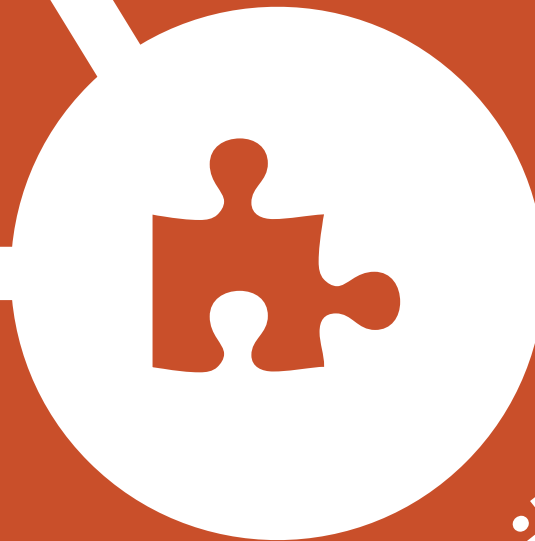
?

MEX
GMAT
STK



High
Performance

C++
Fortran
Java

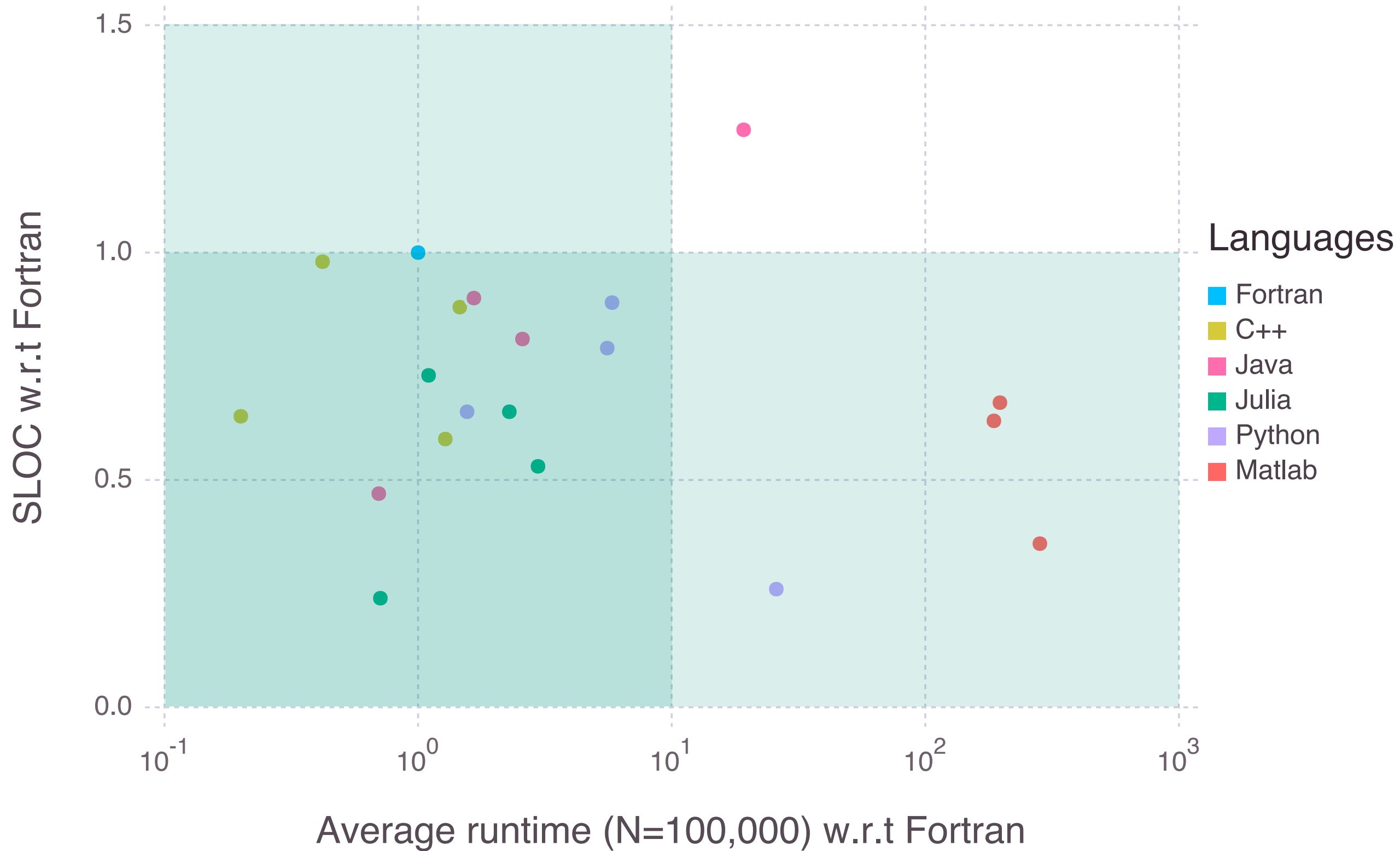


Easily
Extensible

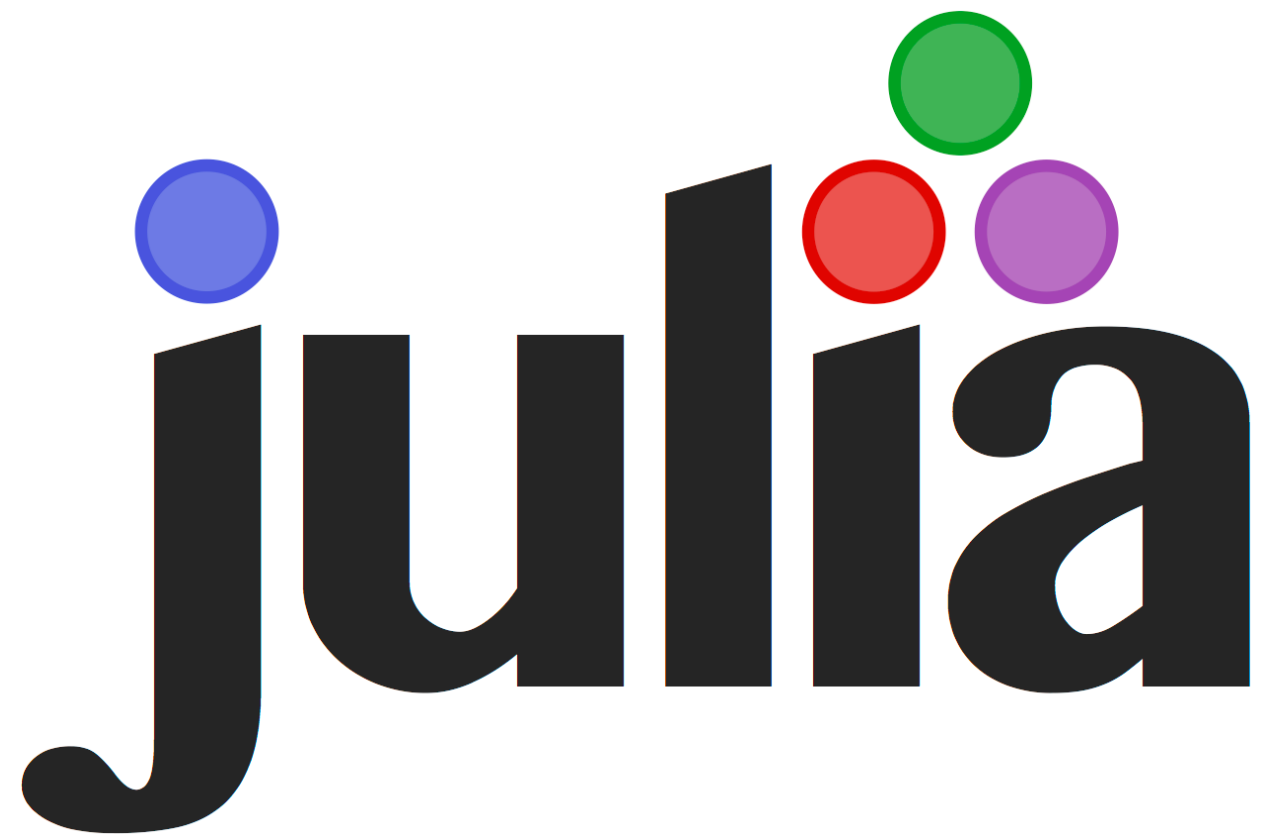
ICATT STUDY

1. Calculating the Keplerian orbital elements
2. Solving Kepler's equation
3. Solving Lambert's problem
4. Calling the DOP853 Fortran 77 code

Fortran, C++, Java, MATLAB, Python, **Julia**



How I Learned to Stop Worrying and Love the JIT

The logo for the Julia programming language, featuring the word "julia" in a dark gray, lowercase, sans-serif font. Above the letter 'j' is a blue circle. Above the letter 'i' is a red circle. Above the letter 'l' is a green circle. Above the letter 'a' is a purple circle.

julia



AstroDynamics.jl

<https://github.com/JuliaAstrodynamics/AstroDynamics.jl>

Example

High performance



Extensible at runtime



API for humans



Well documented



Make STK obsolete



A curved horizon of Mars, showing its reddish-brown surface with numerous craters and a bright, glowing edge where it meets the blackness of space.

How I can I help you get
your mission of the
ground?

THANK YOU VERY MUCH!