

**Firefly**, from RotorS, to track a desired trajectory. This mission depends on:

- controller: a trajectory tracking controller
- reference: a reference position trajectory to be tracked
- yaw\_controller: a yaw controller
- yaw\_reference: a yaw reference
- controller=SimplePIDController:

PID Controller, with saturation on integral part

$\text{force}(\Delta t, p, p_d) = 1.669 * (p_d^{(2)} + u(p^{(0)} - p_d^{(0)}, p^{(1)} - p_d^{(1)}) + g e_3 - d^{\text{est}})$ , where

- $u_{xy}(p, v) = -1.0 * p - 1.0 * v$
- $u_z(p, v) = -1.0 * p - 1.0 * v$
- $d_{xy}^{\text{est}(1)} = 0.0 * (kp/2 * ep + ev)$
- $|d_{xy}^{\text{est}(0)}| \leq 0.0$
- $d_z^{\text{est}(1)} = 0.5 * (kp/2 * ep + ev)$
- $|d_z^{\text{est}(0)}| \leq 0.0$
- yaw\_controller=SimpleTrackingYawController: SimpleTrackingYawController has no method object\_description()
- reference=FixedPointTrajectory: FixedPointTrajectory has no method object\_description()
- yaw\_reference=FixedYawTrajectory: FixedYawTrajectory has no method object\_description()

<p>

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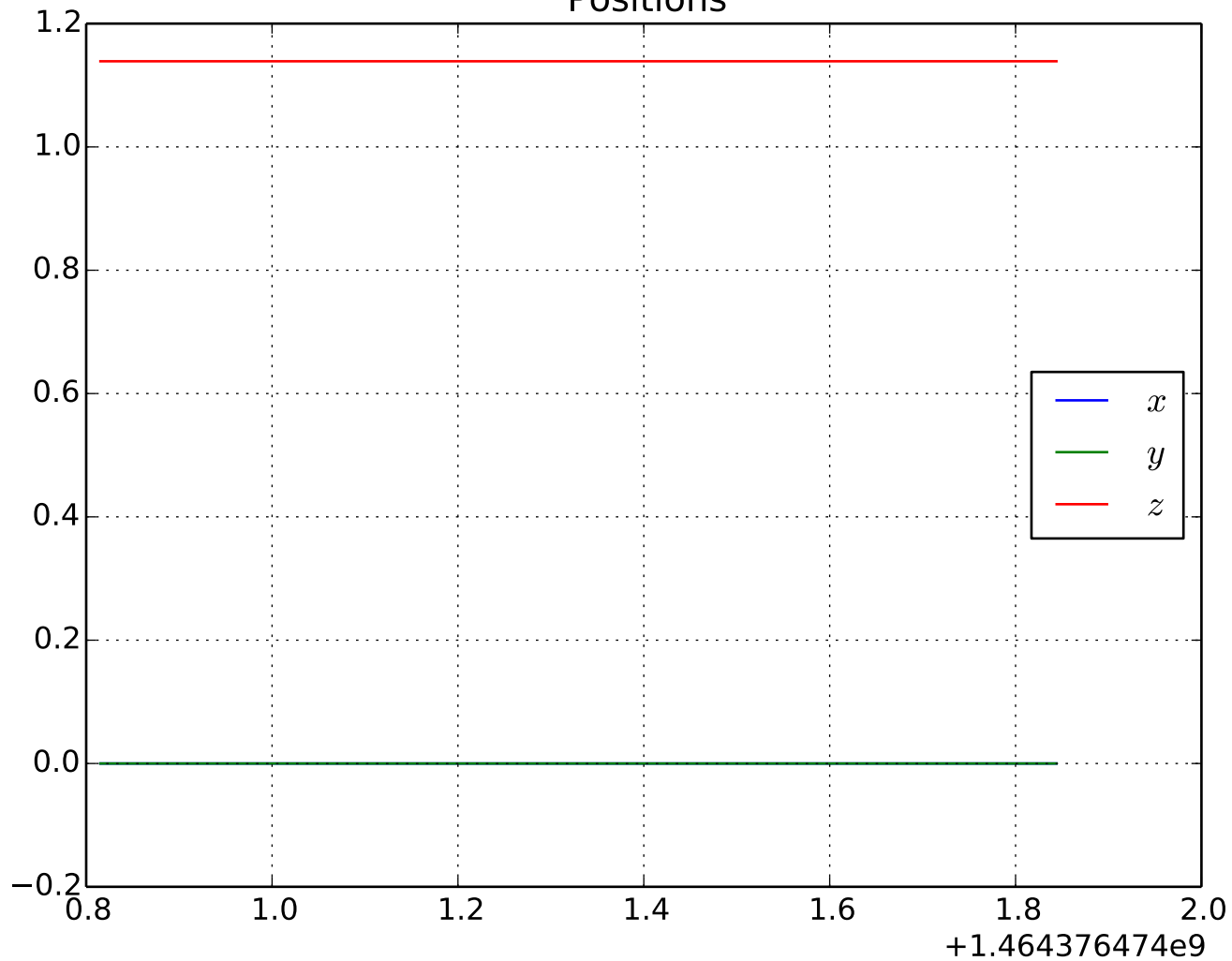
<li>yaw\_controller: a yaw controller</li>

<li>yaw\_reference: a yaw reference</li>

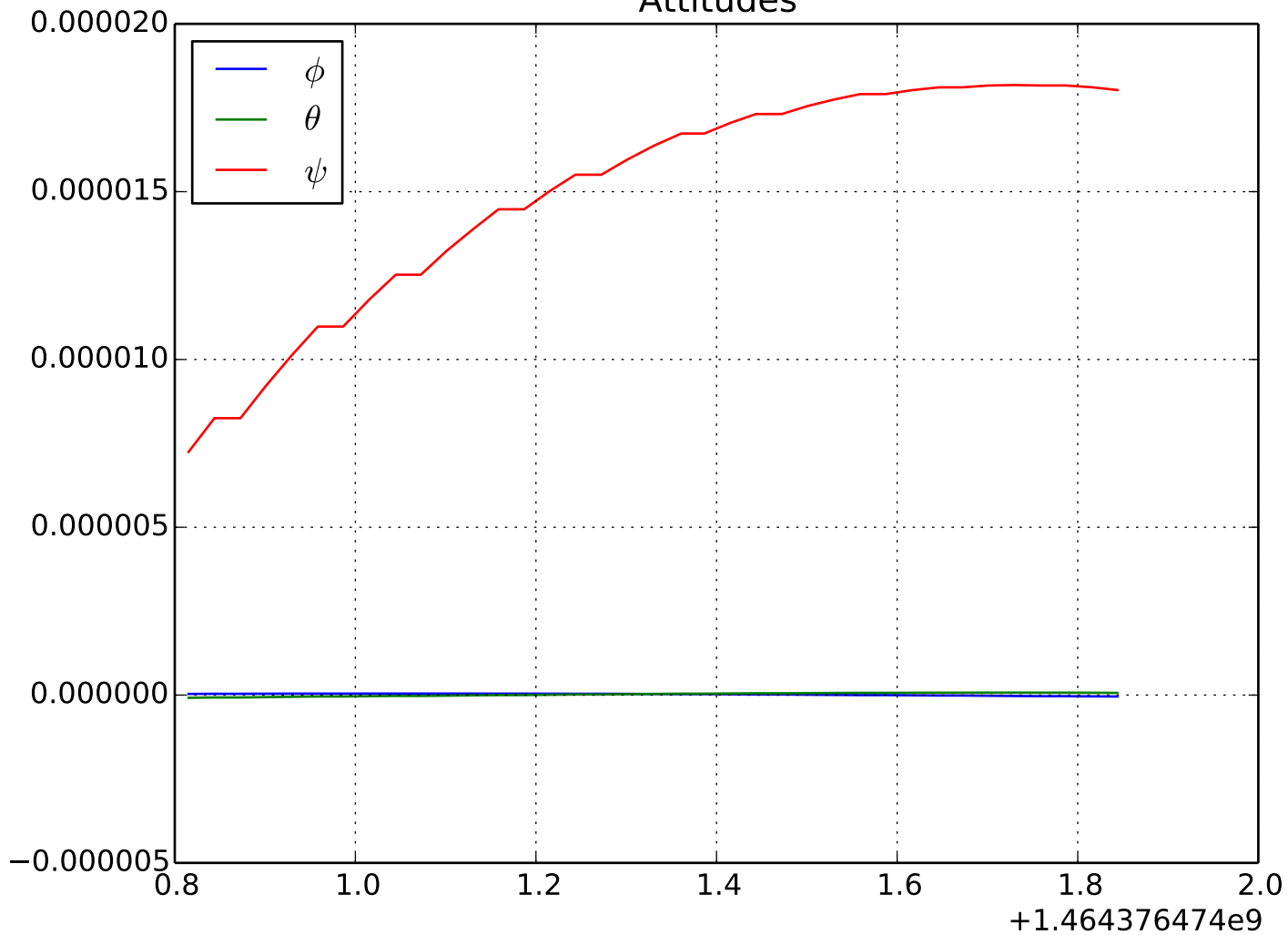
</ul>

/2\* $\epsilon_p$  +  $\epsilon_v$ )</li><li>|d<sub>xy</sub><sup>est(0)</sup>| &#8804; 0.0</li><li>d<sub>z</sub>/s

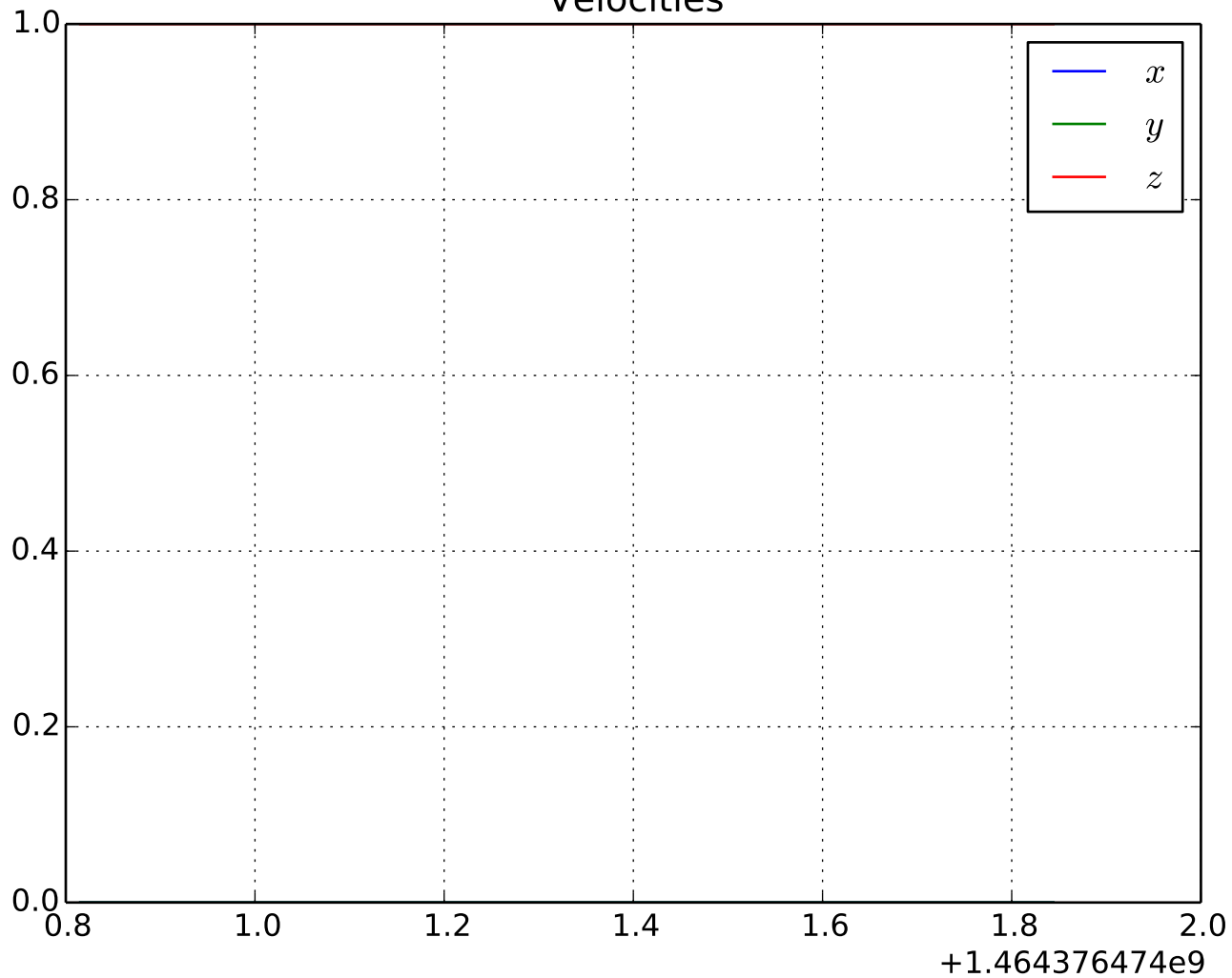
# Positions



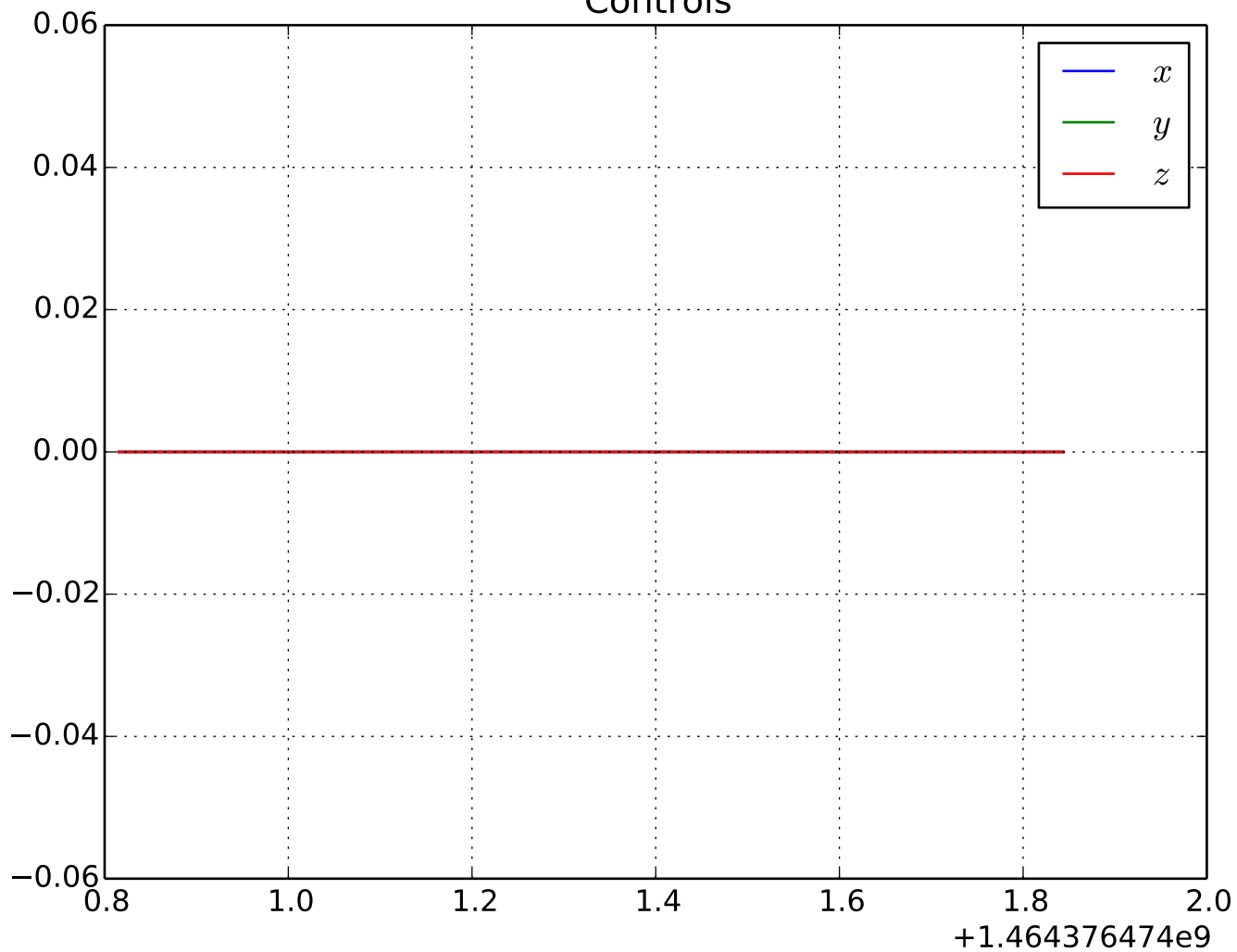
# Attitudes



# Velocities



# Controls



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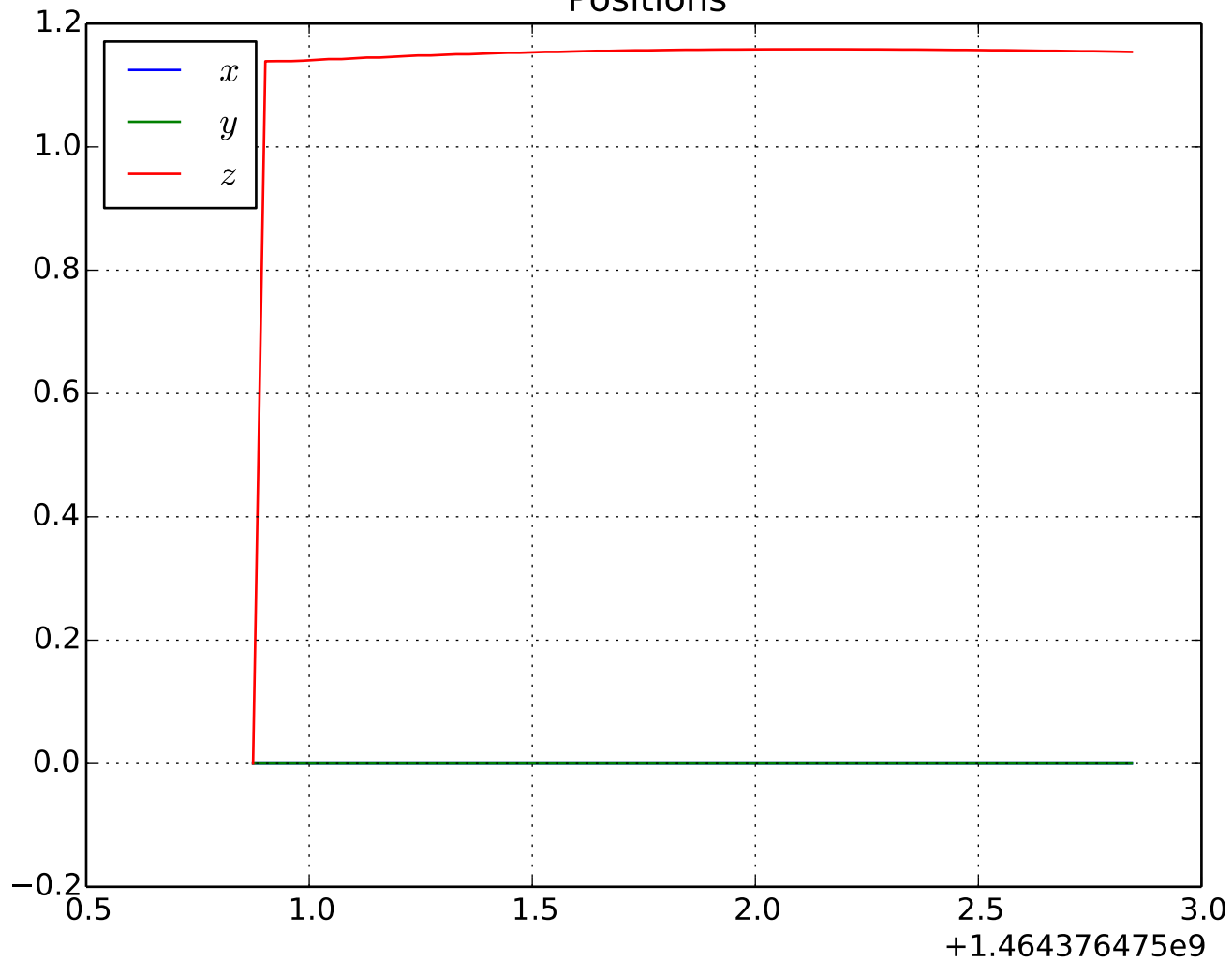
<li>yaw\_reference: a yaw reference</li>

</ul>

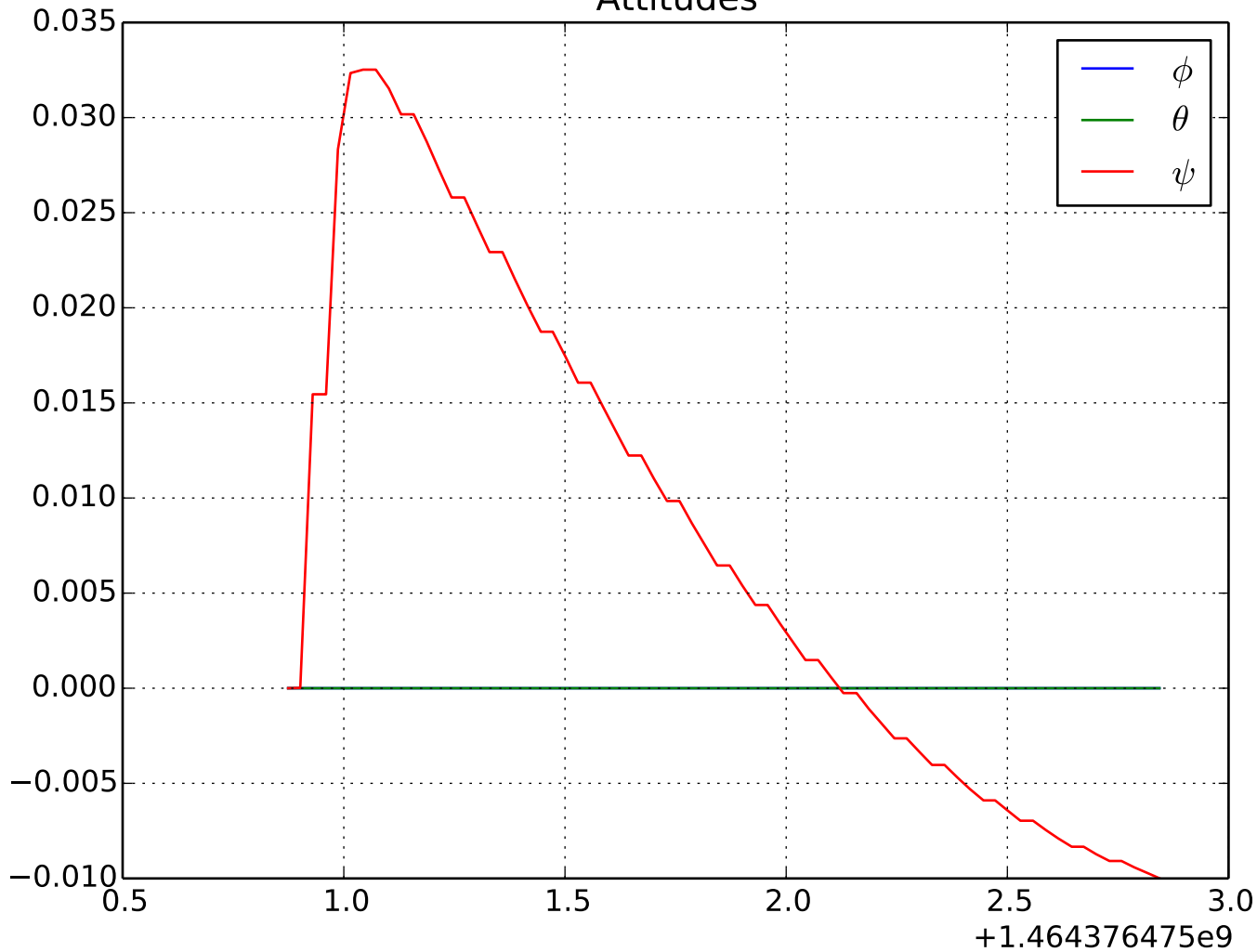
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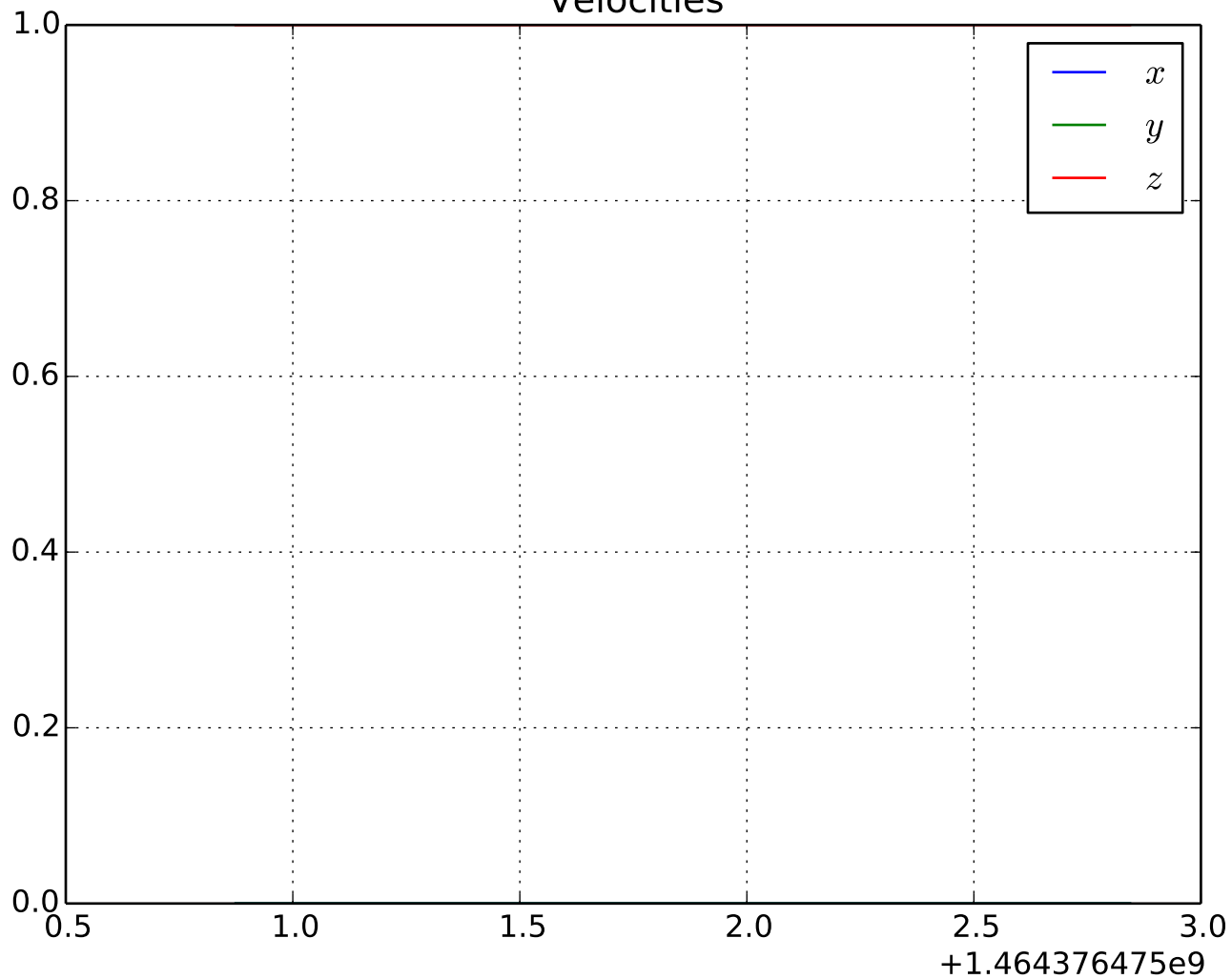
Positions



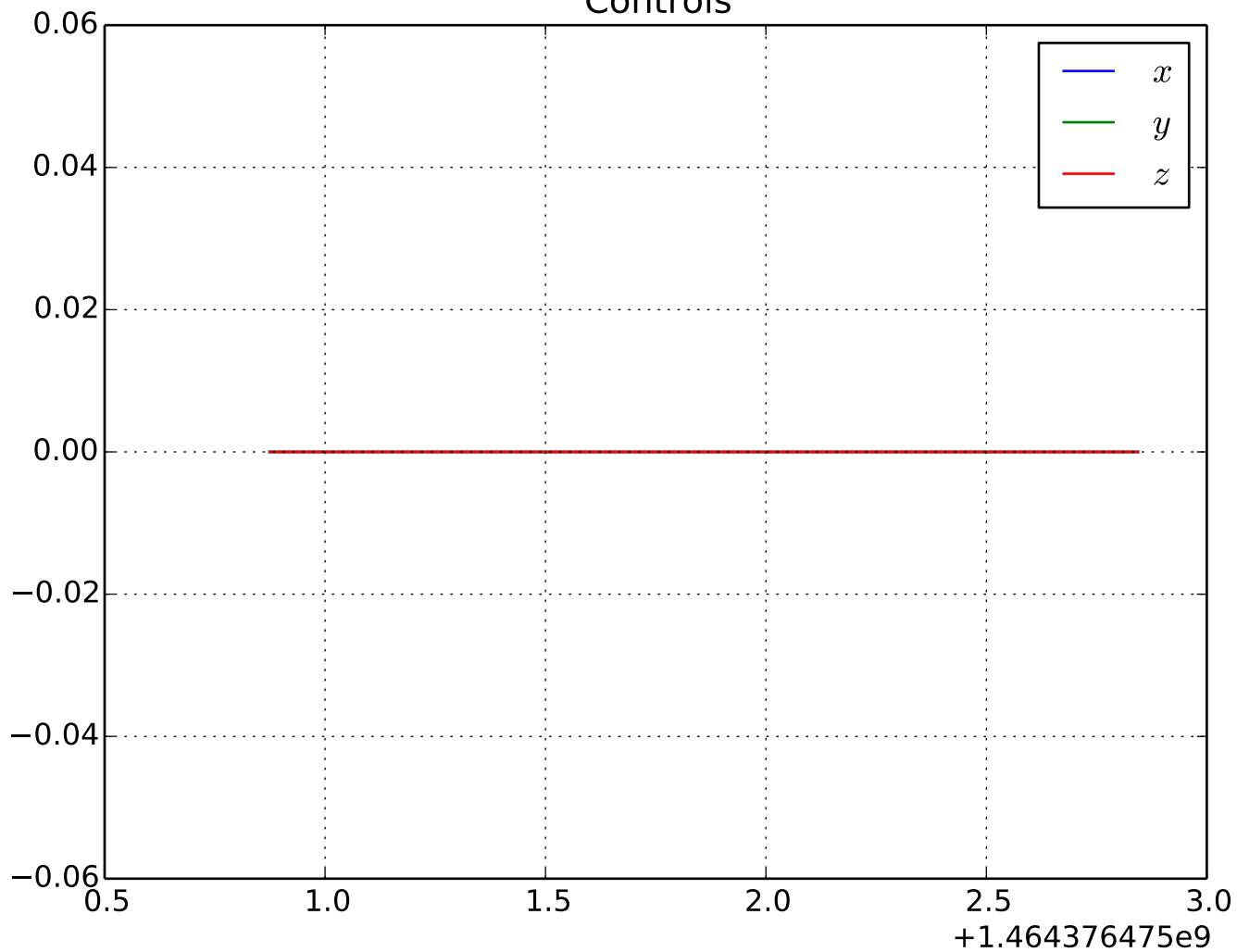
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- reference=CircleTrajectory: CircleTrajectory has no method object\_description()
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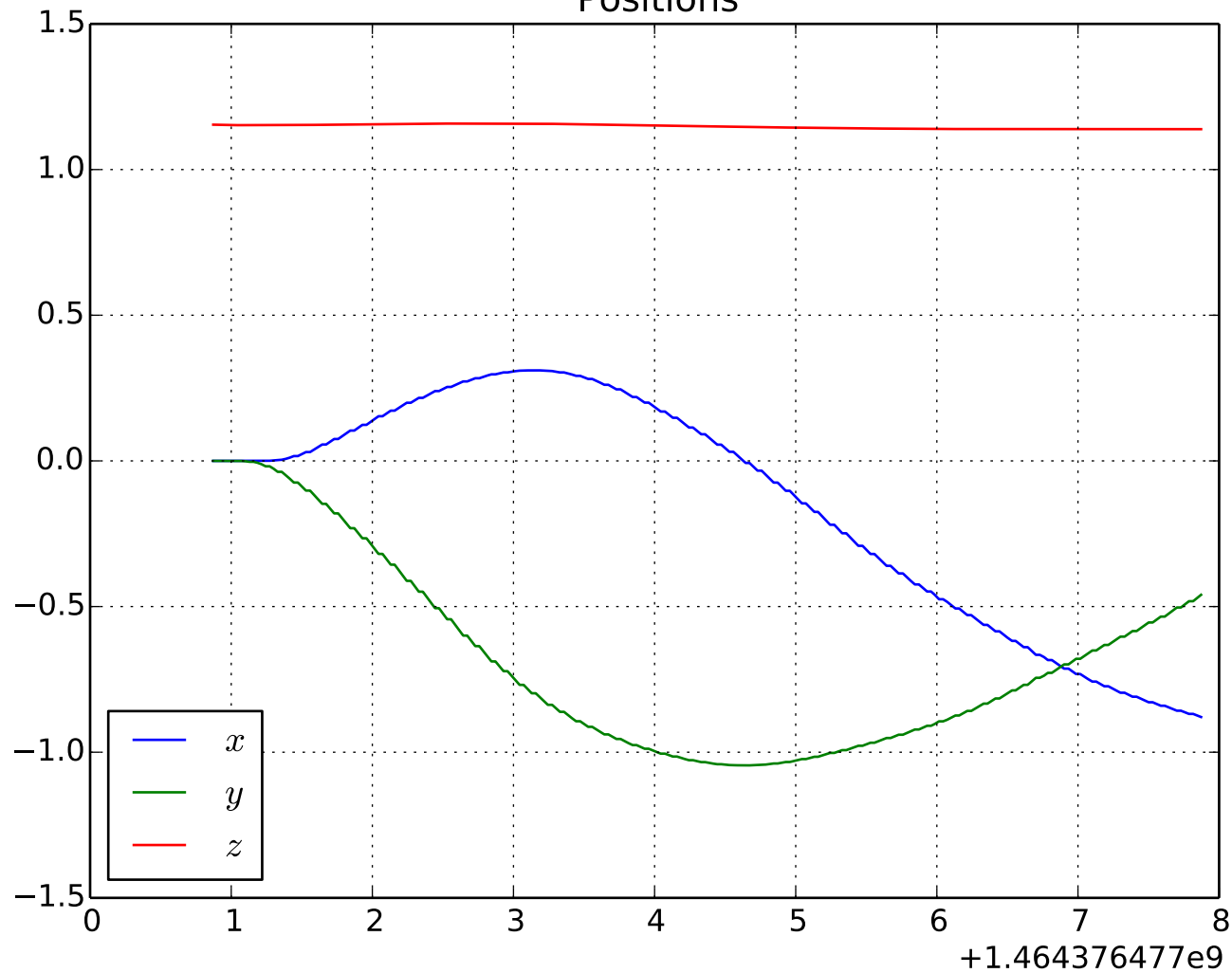
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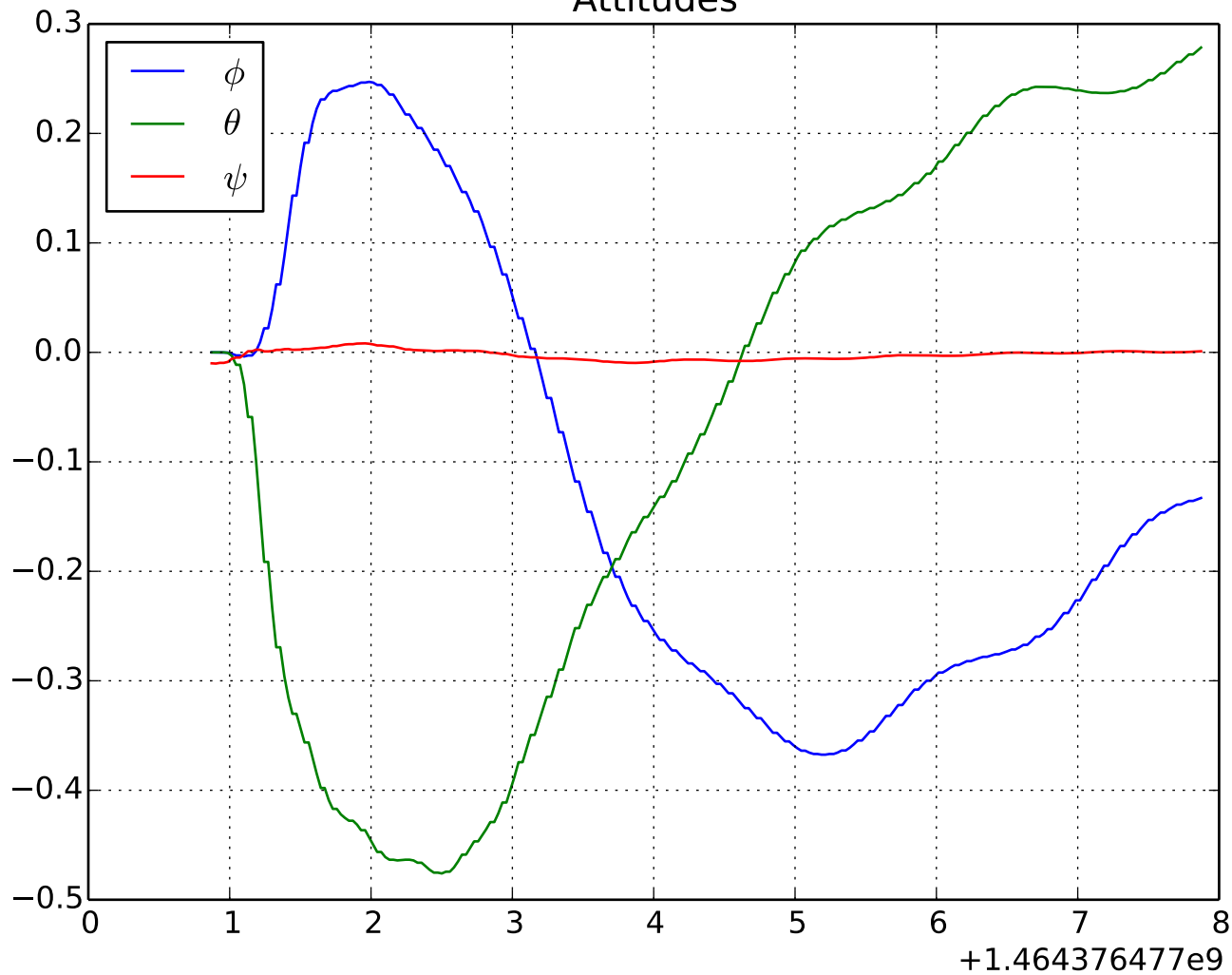
</ul>

\*(kp/2\*ep + ev)</li><li>|d<sub>xy</sub><sup>est(0)</sup>| &#8804; 0.0</li><li>d<sub>

Positions



# Attitudes





# Velocities

