

Orekit - Bug #351

PartialDerivativesEquations does not work with non-Cartesian elements

2017-08-11 15:57 - Evan Ward

Status:	New	Start date:	2017-08-11
Priority:	Normal	Due date:	
Assignee:		% Done:	0%
Category:		Estimated time:	0.00 hour
Target version:			
Description			
<p>Using PDE with the propagator's orbitType set to a non-Cartesian value does not produce meaningful results. See the discussion on the dev list: https://www.orekit.org/www/arc/orekit-developers/2017-08/msg00010.html</p> <p>One workaround is to compute the STM in Cartesian elements and then transform it to the desired element set using equation 7.32 in Montenbruck & Gill:</p> $\text{STM}(\text{Keplerian}) = \text{d}(\text{kep})/\text{d}(\text{cart}) * \text{STM}(\text{Cartesian}) * (\text{d}(\text{kep})/\text{d}(\text{cart}))^{-1}$ <p>Another workaround is to use a FieldNumericalPropagator with the orbitType set to the desired value, and then extract the STM from the final orbital elements.</p>			