

# Report Generated by Test Manager

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**Title:** Helicopter outer loop test  
**Author:** bpotter  
**Date:** 31-May-2019 12:54:34

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## Test Environment

Platform: PCWIN64  
MATLAB: (R2019a)

## Summary

Name	Outcome	Duration (Seconds)
 <a href="#">HeliLoopTest</a>	6✔	159
 <a href="#">Helicopter Pitch Control Test</a>	2✔	58
 <a href="#">SmallPositiveStep</a>	✔	31
 <a href="#">SmallNegativeStep</a>	✔	27
 <a href="#">Helicopter Roll Control Test</a>	2✔	50
 <a href="#">SmallPositiveStep</a>	✔	25
 <a href="#">SmallNegativeStep</a>	✔	25
 <a href="#">Helicopter Yaw Control Test</a>	2✔	51
 <a href="#">SmallPositiveStep</a>	✔	26
 <a href="#">SmallNegativeStep</a>	✔	25

## HeliLoopTest

### Test Result Information

Result Type: Test File Result  
Parent: None  
Start Time: 31-May-2019 12:51:55  
End Time: 31-May-2019 12:54:34  
Outcome: Total: 6, **Passed: 6**

### Test Suite Information

Name: HeliLoopTest

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## Helicopter Pitch Control Test

### Test Result Information

Result Type: Test Suite Result  
Parent: [HeliLoopTest](#)  
Start Time: 31-May-2019 12:51:55  
End Time: 31-May-2019 12:52:53  
Outcome: Total: 2, **Passed: 2**

### Test Suite Information

Name: Helicopter Pitch Control Test

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## SmallPositiveStep

### Test Result Information

Result Type: Test Case Result  
Parent: [Helicopter Pitch Control Test](#)  
Start Time: 31-May-2019 12:51:55  
End Time: 31-May-2019 12:52:26  
Outcome: **Passed**  
Description:

Pitch step of +1 degree to determine tracking, overshoot and rise time.

### Test Case Information

Name: SmallPositiveStep  
Type: Simulation Test

### Test Case Requirements

Description: SR\_6 : Attitude Rate Tracking Performance (HelicopterSystemRequirements#10)  
Document: [HelicopterSystemRequirements.slreqx](#)

### Simulation

#### System Under Test Information

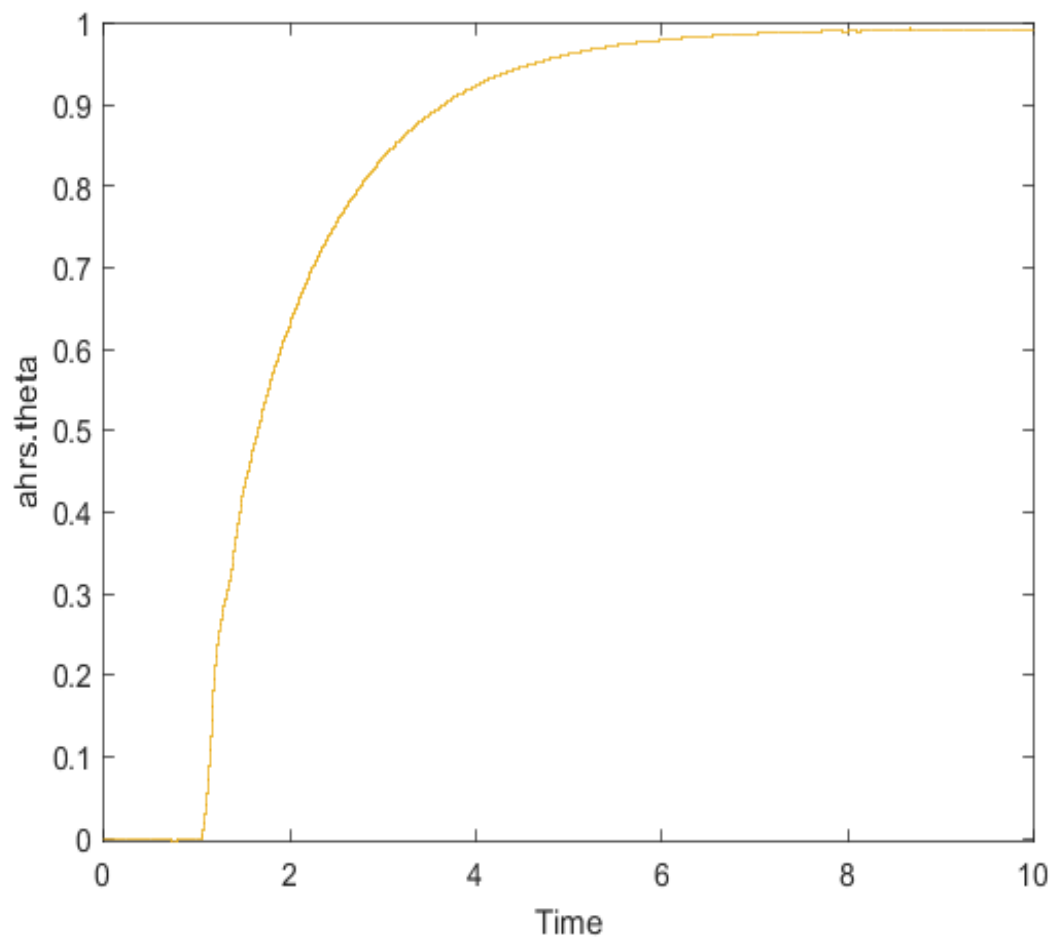
Model: HelicopterSystem  
Simulation Mode: normal  
Configuration Set: Configuration  
Start Time: 0  
Stop Time: 10  
Checksum: 1452374767 2694912940 1796571153 1815399691  
Simulink Version: 9.3  
Model Version: 1.21  
Model Author: bpotter  
Date: Wed May 08 07:15:05 2019  
User ID: bpotter  
Model Path: C:\Users\bpotter\MATLAB\Projects\ARP\_Example\_Project\ARP\_03\_SystemArchitecture\specification\HelicopterSystem.slx  
  
Machine Name: AH-BPOTTER  
Solver Name: ode23t  
Solver Type: Variable-Step  
Max Step Size: 0.001  
Simulation Start Time: 2019-05-31 12:51:56  
Simulation Stop Time: 2019-05-31 12:52:24  
Platform: PCWIN64

#### Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
ahrs.theta	double	deg	0.01	zoh	union	<a href="#">Link</a>
ahrs.phi	double	deg	0.01	zoh	union	<a href="#">Link</a>
ahrs.psi	double	deg	0.01	zoh	union	<a href="#">Link</a>
ahrs.q	double	deg/sec	0.01	zoh	union	<a href="#">Link</a>

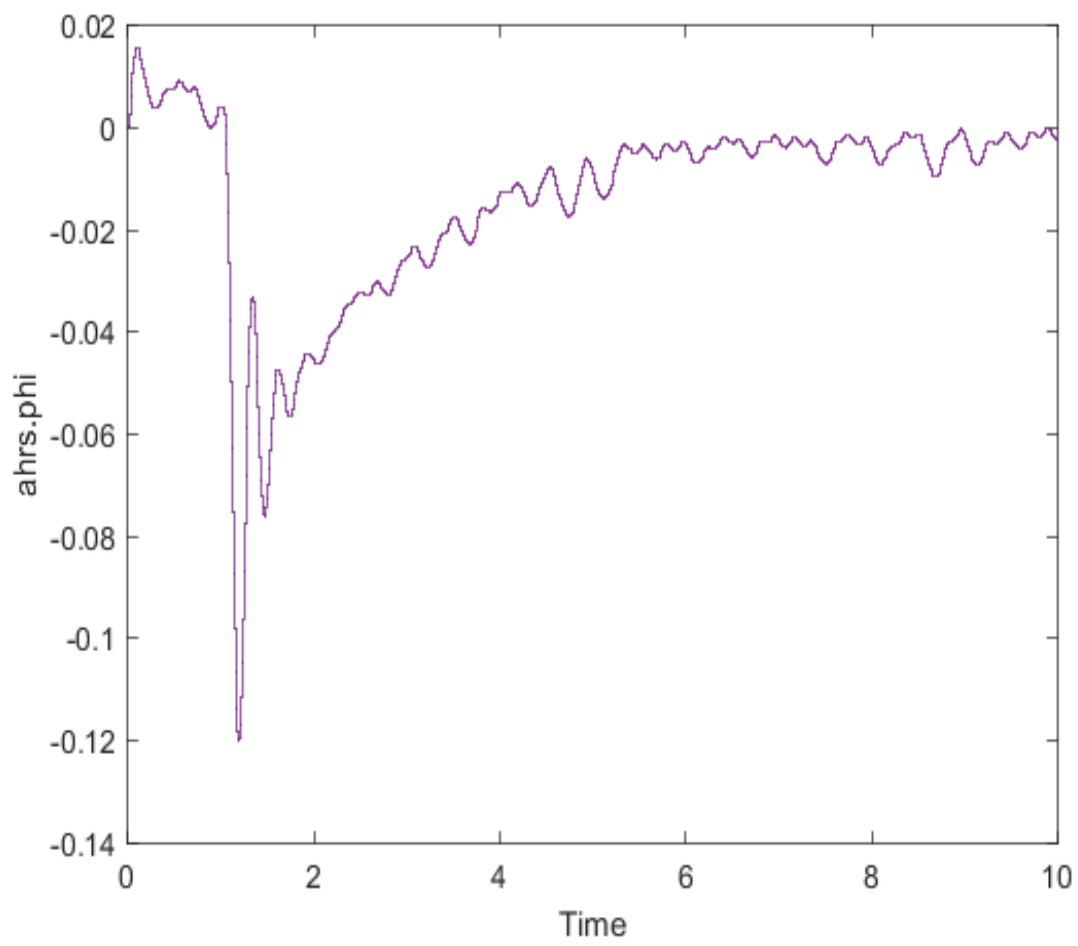
ahrs.p	double	deg/sec	0.01	zoh	union	<a href="#">Link</a>
ahrs.r	double	deg/sec	0.01	zoh	union	<a href="#">Link</a>
ahrs.valid	boolean		0.01	zoh	union	<a href="#">Link</a>

Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.theta	double	deg	0.01	zoh	union



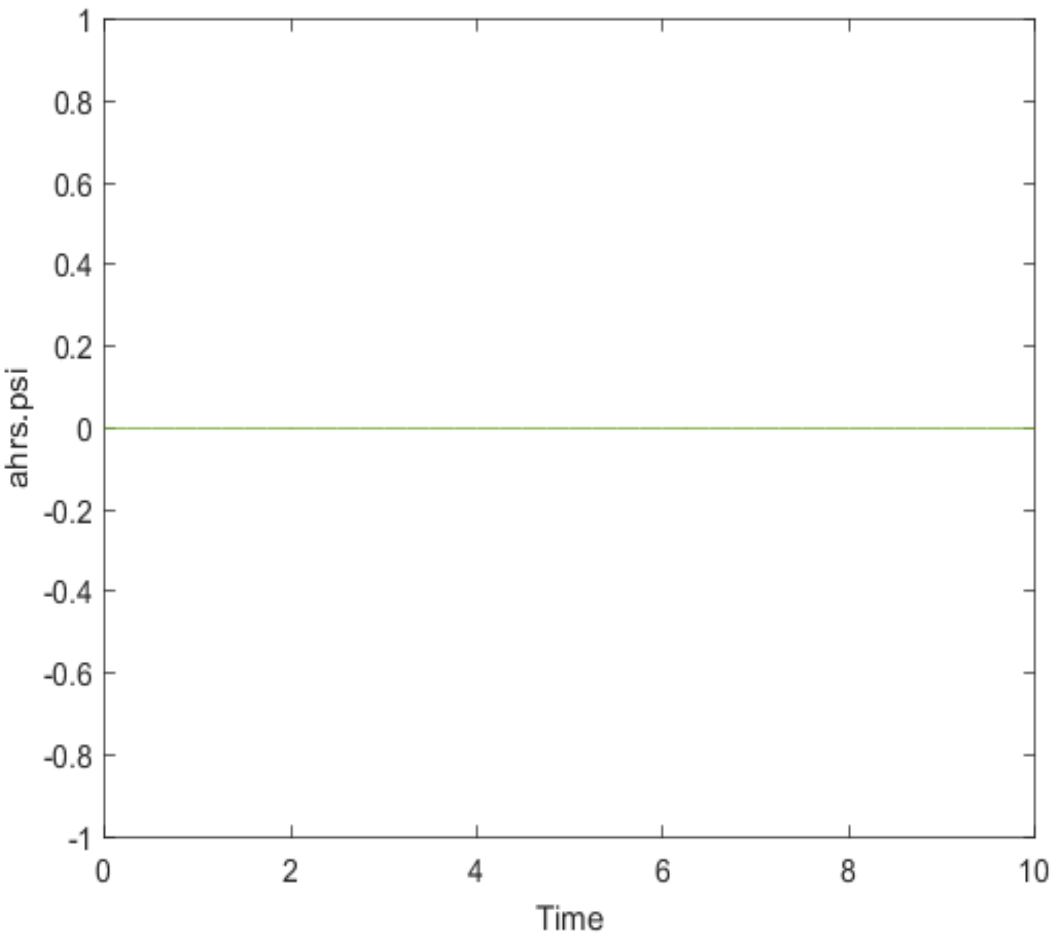
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Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.phi	double	deg	0.01	zoh	union



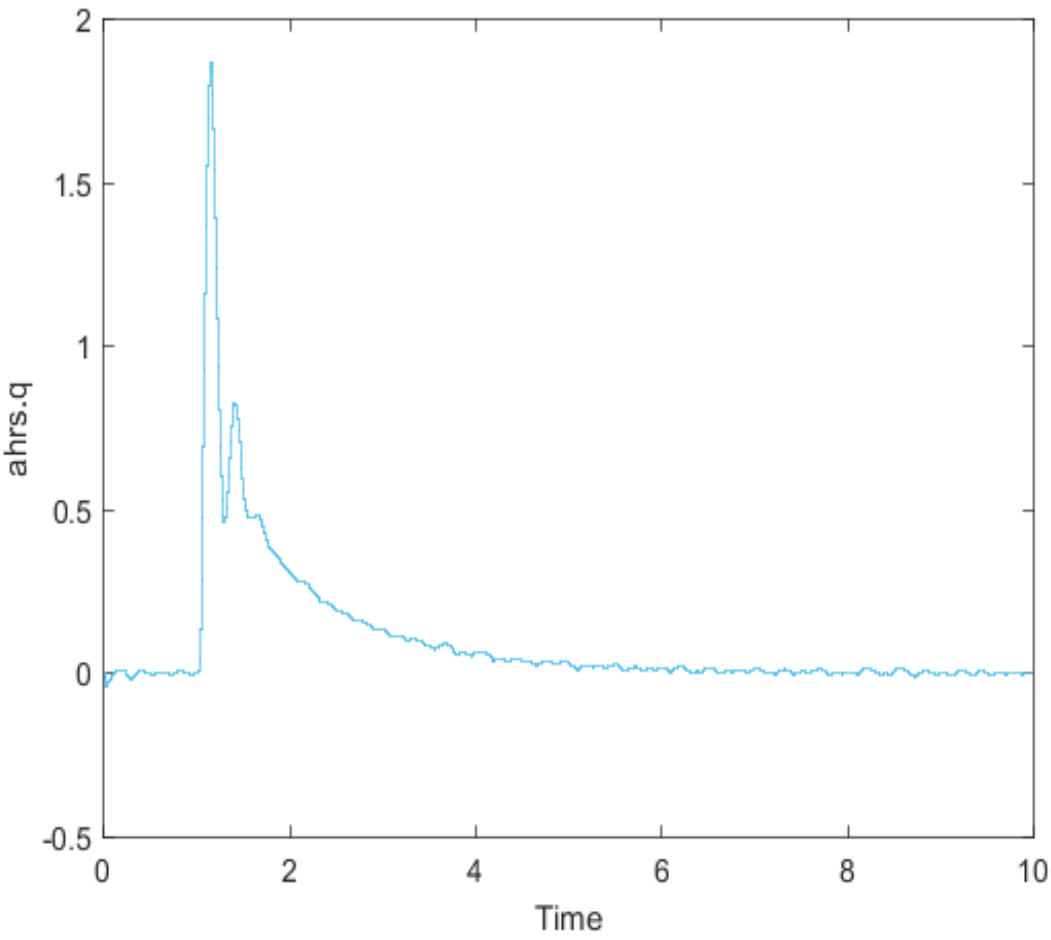
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Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.psi	double	deg	0.01	zoh	union



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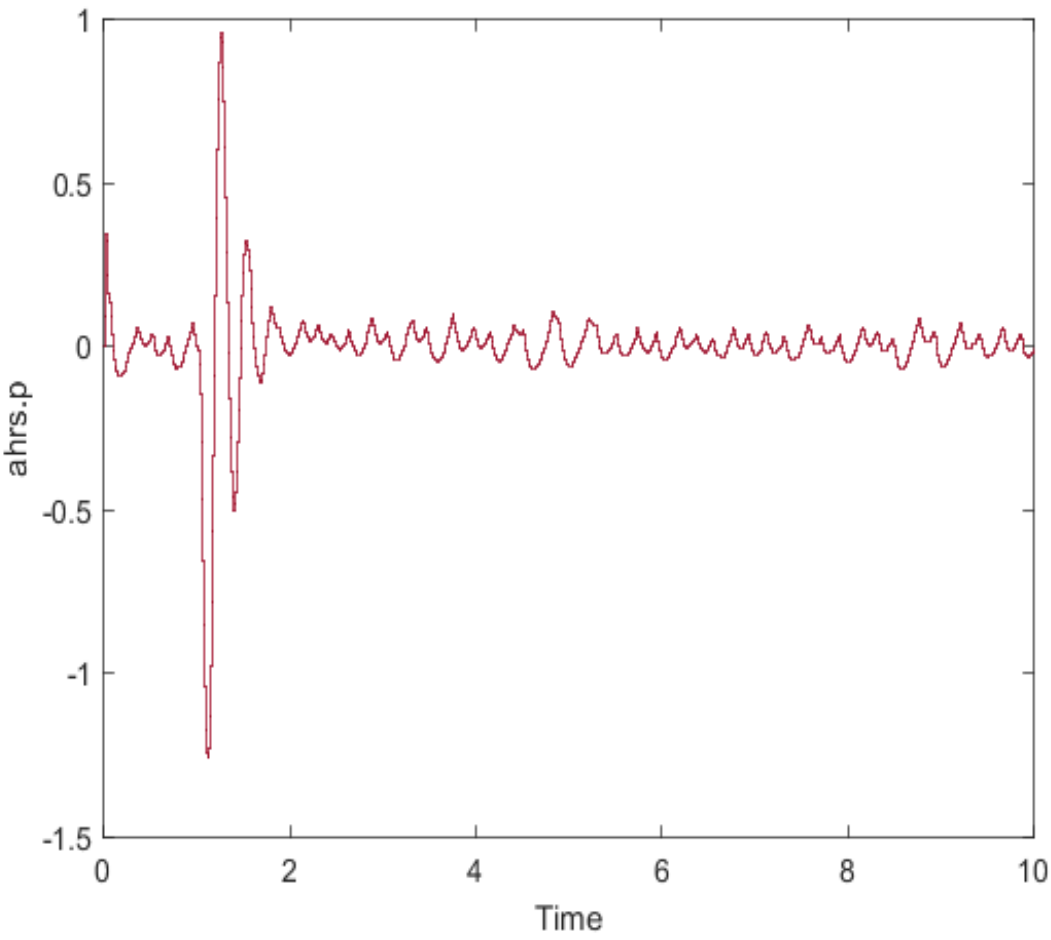
Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.q	double	deg/sec	0.01	zoh	union



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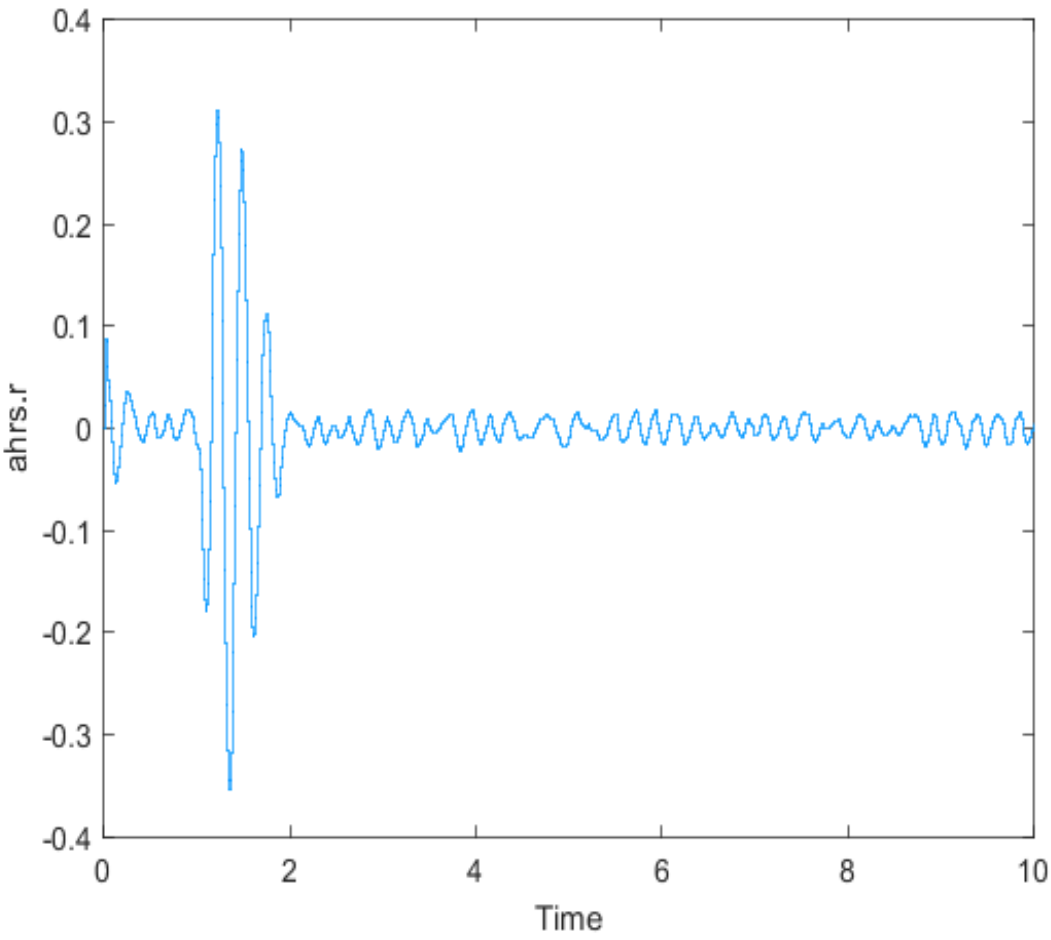


Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.p	double	deg/sec	0.01	zoh	union



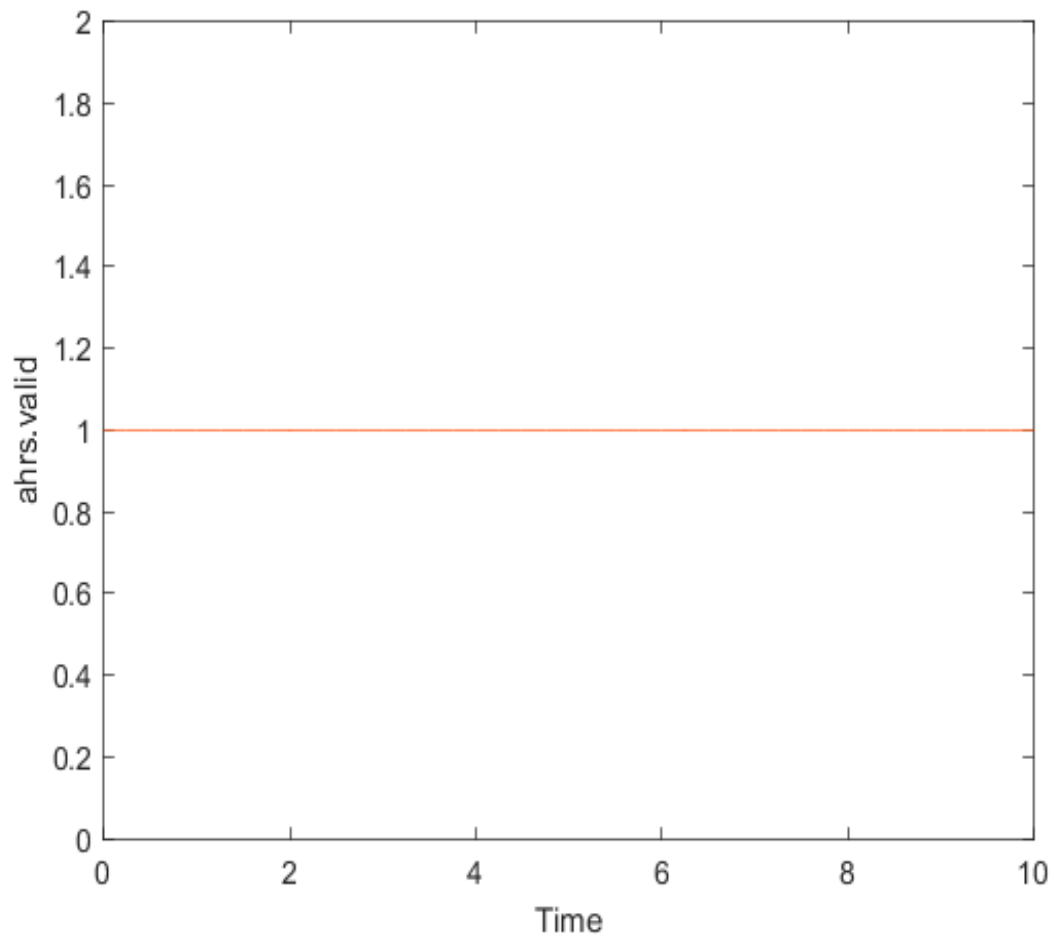
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Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.r	double	deg/sec	0.01	zoh	union



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Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.valid	boolean		0.01	zoh	union



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**Custom Criteria Result Information**

Diagnostic Record:  
Outcome: Passed  
Event: VerificationPassed

-----  
VerificationPassed in custom criteria of sltest.testmanager.TestCase.

-----

Framework Diagnostic:

verifyGreaterThanOrEqual passed.

Actual Value:

0.888241353397106

Minimum Value (Inclusive):

0.6300000000000000

Diagnostic Record:

Outcome:	Passed
Event:	VerificationPassed

VerificationPassed in custom criteria of sltest.testmanager.TestCase.

Framework Diagnostic:

verifyLessThanOrEqual passed.

Actual Value:

0.993492741575472

Maximum Value (Inclusive):

1.1000000000000000

Diagnostic Record:

Outcome:	Passed
Event:	VerificationPassed

VerificationPassed in custom criteria of sltest.testmanager.TestCase.

Framework Diagnostic:

verifyGreaterThanOrEqual passed.

Actual Value:  
0.987639307404695  
Minimum Value (Inclusive):  
0.9500000000000000

---

Diagnostic Record:  
Outcome: Passed  
Event: VerificationPassed

---

VerificationPassed in custom criteria of sltest.testmanager.TestCase.

---

Framework Diagnostic:

---

verifyLessThanOrEqual passed.

Actual Value:  
0.993492741575472  
Maximum Value (Inclusive):  
1.0500000000000000

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## SmallNegativeStep

### Test Result Information

Result Type: Test Case Result  
Parent: [Helicopter Pitch Control Test](#)  
Start Time: 31-May-2019 12:52:26  
End Time: 31-May-2019 12:52:53  
Outcome: Passed  
Description:

Pitch step of -1 degree to determine tracking, overshoot and rise time.

### Test Case Information

Name: SmallNegativeStep

Type: Simulation Test

### Test Case Requirements

Description: SR\_6 : Attitude Rate Tracking Performance (HelicopterSystemRequirements#10)

Document: [HelicopterSystemRequirements.slreqx](#)

### Simulation

#### System Under Test Information

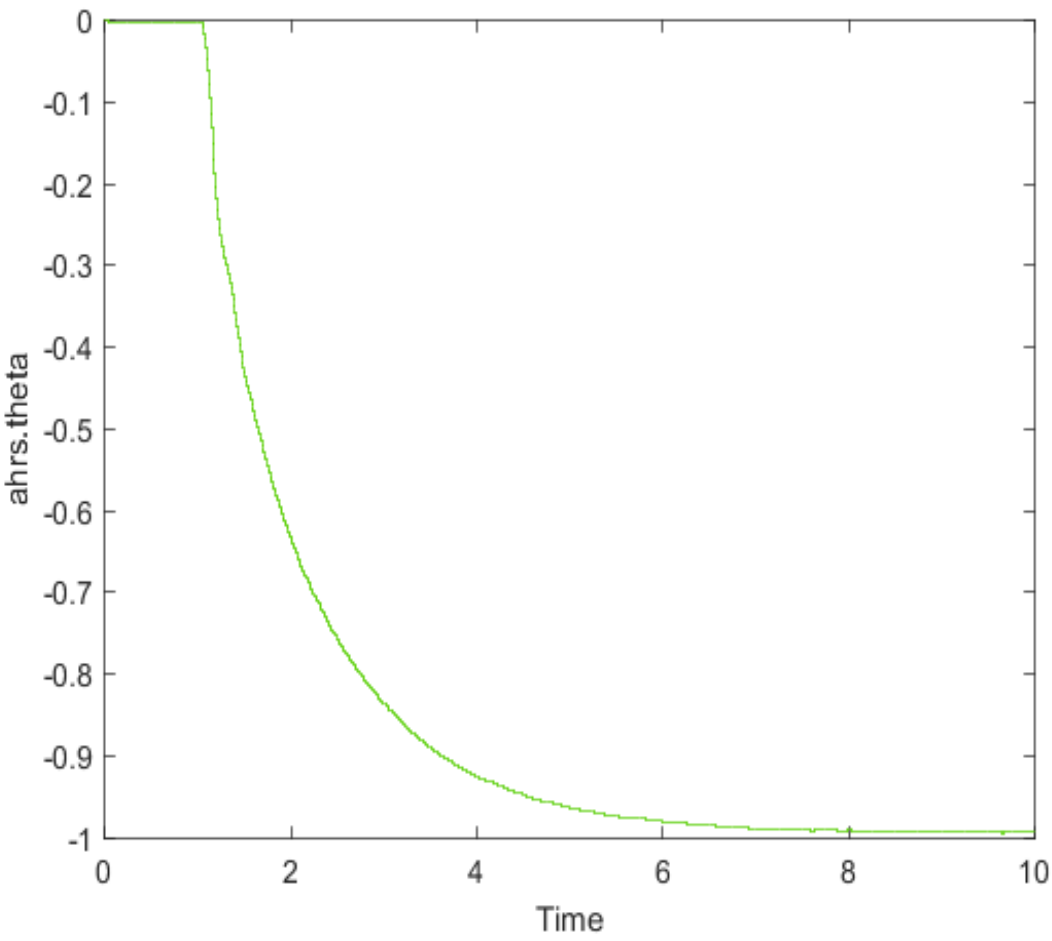
Model: HelicopterSystem  
Simulation Mode: normal  
Configuration Set: Configuration  
Start Time: 0  
Stop Time: 10  
Checksum: 1452374767 2694912940 1796571153 1815399691  
Simulink Version: 9.3  
Model Version: 1.21  
Model Author: bpotter  
Date: Wed May 08 07:15:05 2019  
User ID: bpotter  
Model Path: C:\Users\bpotter\MATLAB\Projects\ARP\_Example\_Project\ARP\_03\_SystemArchitecture\specification\HelicopterSystem.slx  
  
Machine Name: AH-BPOTTER  
Solver Name: ode23t  
Solver Type: Variable-Step  
Max Step Size: 0.001  
Simulation Start Time: 2019-05-31 12:52:26  
Simulation Stop Time: 2019-05-31 12:52:52  
Platform: PCWIN64

#### Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
ahrs.theta	double	deg	0.01	zoh	union	<a href="#">Link</a>
ahrs.phi	double	deg	0.01	zoh	union	<a href="#">Link</a>
ahrs.psi	double	deg	0.01	zoh	union	<a href="#">Link</a>
ahrs.q	double	deg/sec	0.01	zoh	union	<a href="#">Link</a>
ahrs.p	double	deg/sec	0.01	zoh	union	<a href="#">Link</a>

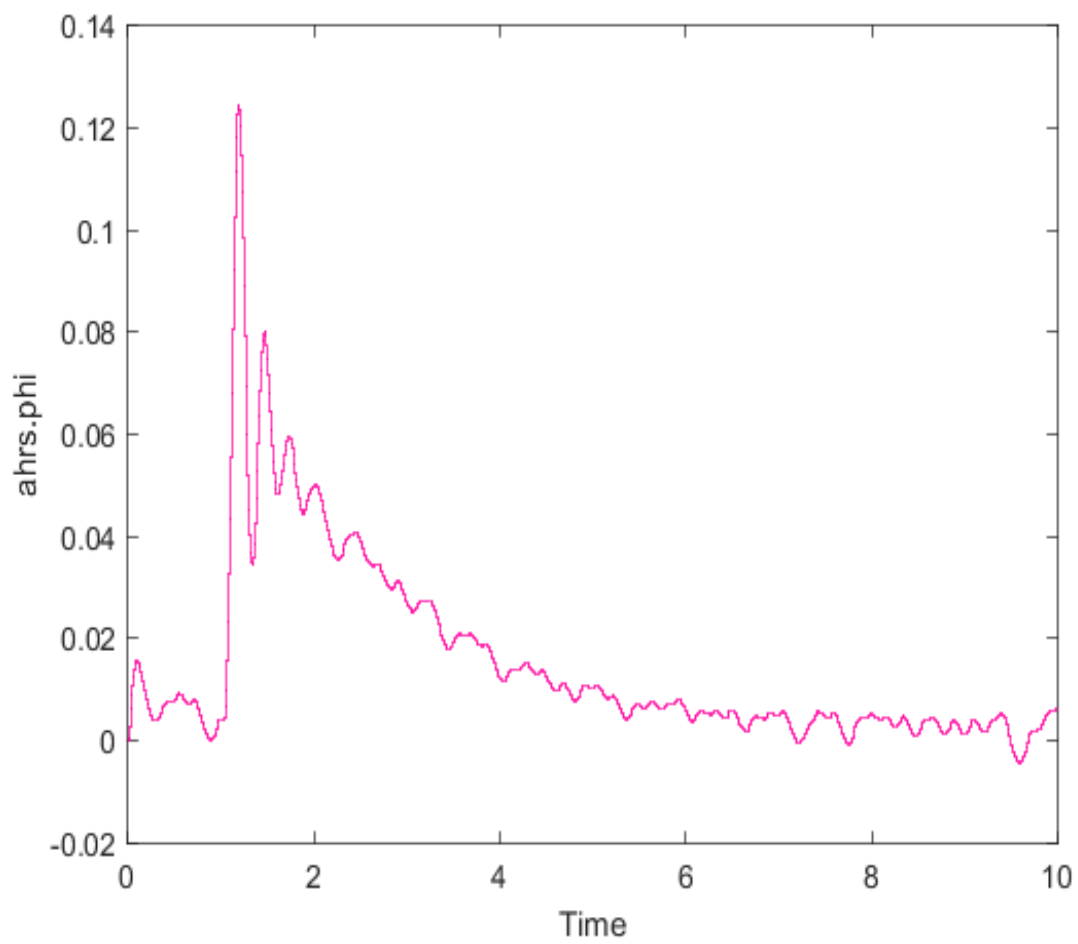
ahrs.r	double	deg/sec	0.01	zoh	union	<a href="#">Link</a>
ahrs.valid	boolean		0.01	zoh	union	<a href="#">Link</a>

Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.theta	double	deg	0.01	zoh	union



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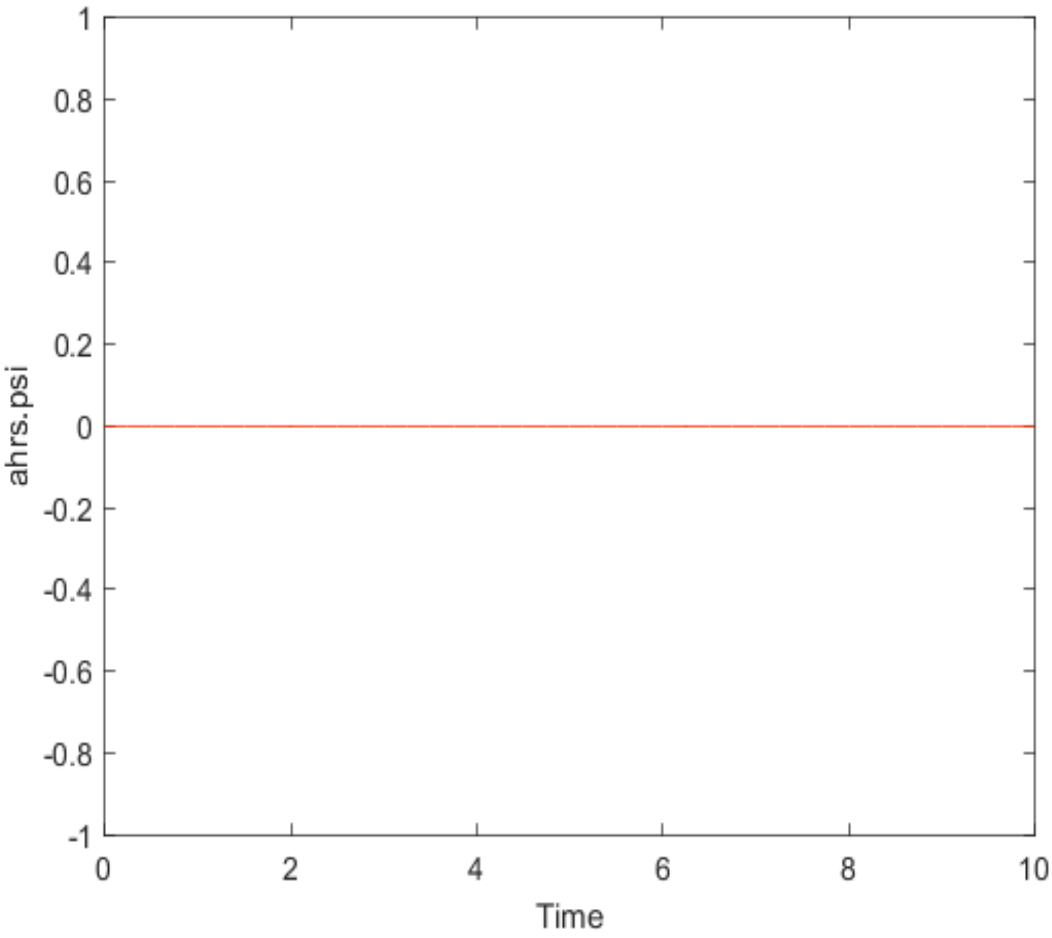
Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.phi	double	deg	0.01	zoh	union



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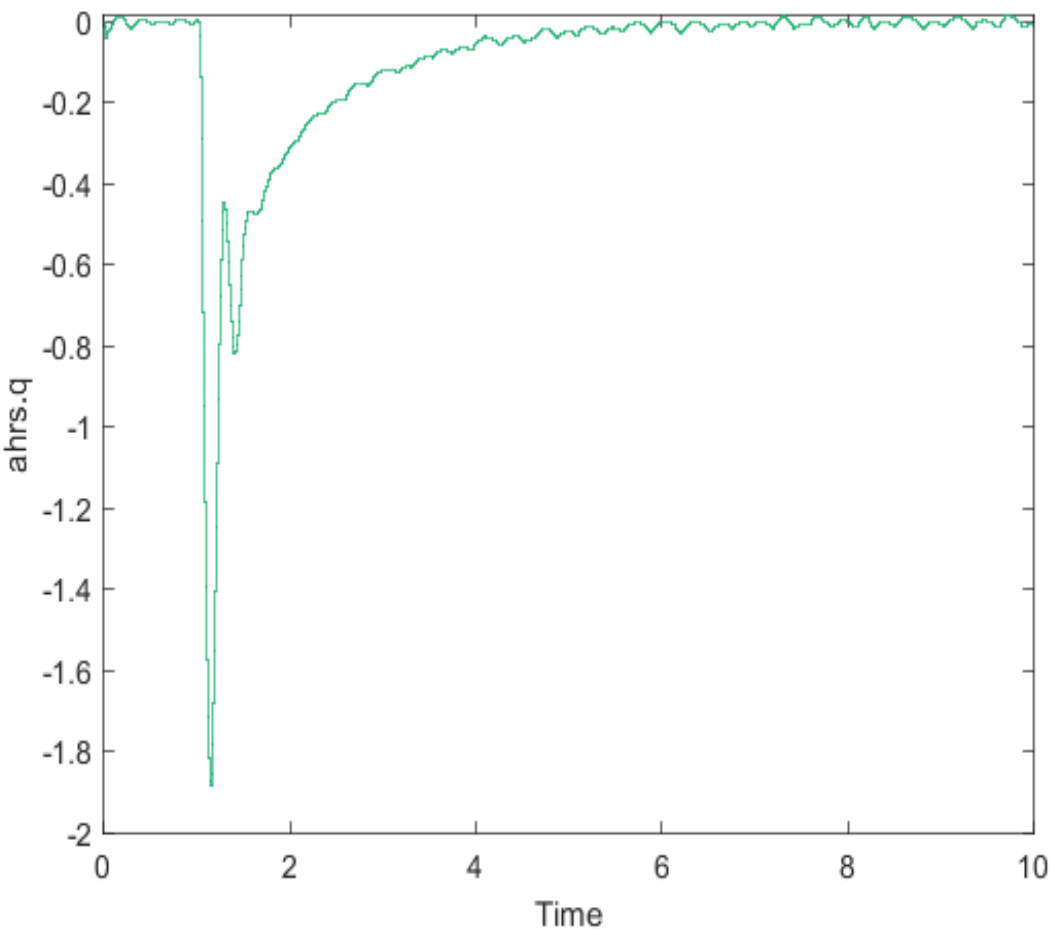


Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.psi	double	deg	0.01	zoh	union



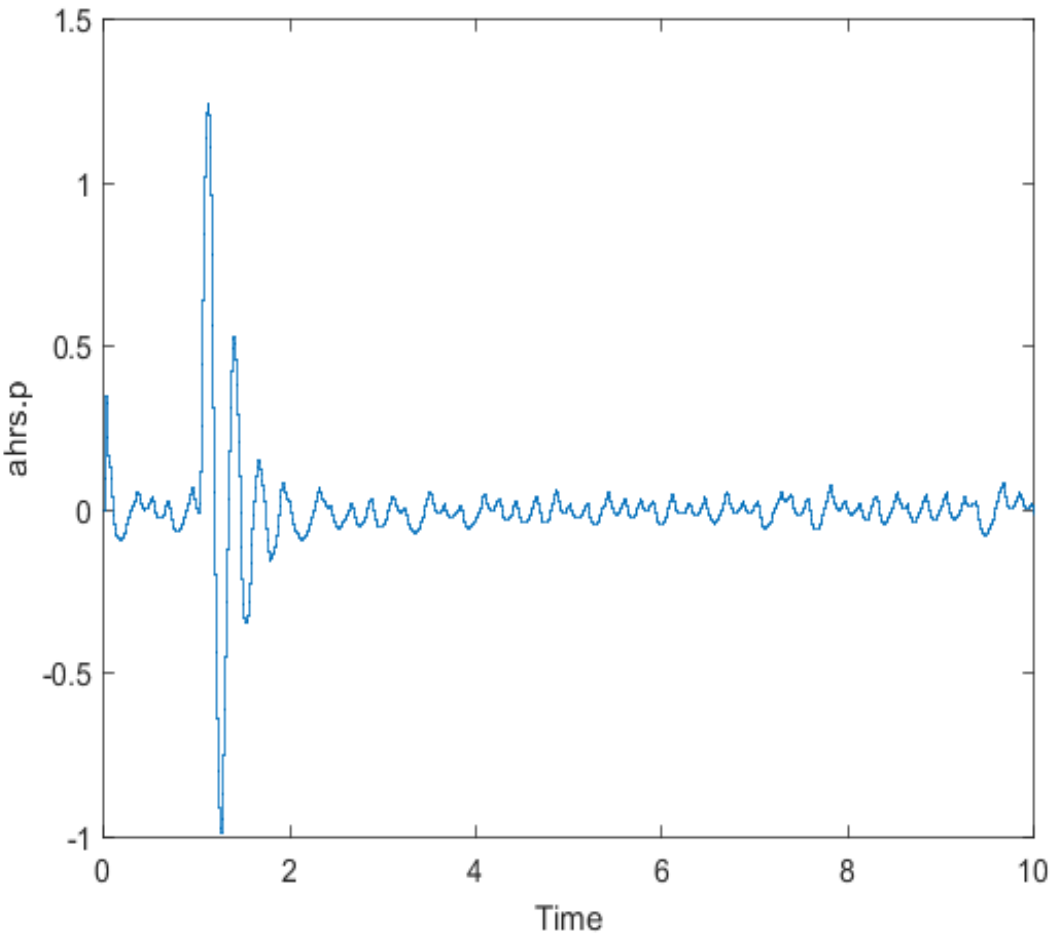
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Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.q	double	deg/sec	0.01	zoh	union



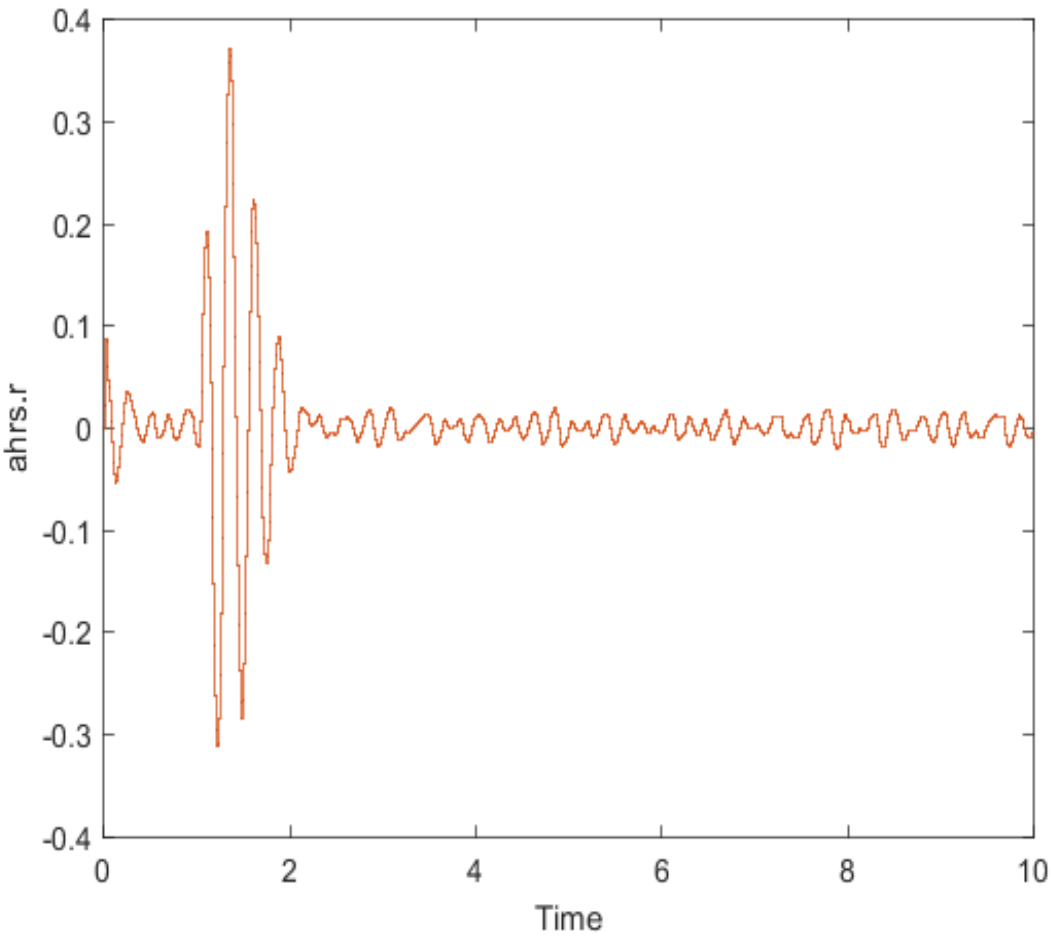
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Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.p	double	deg/sec	0.01	zoh	union



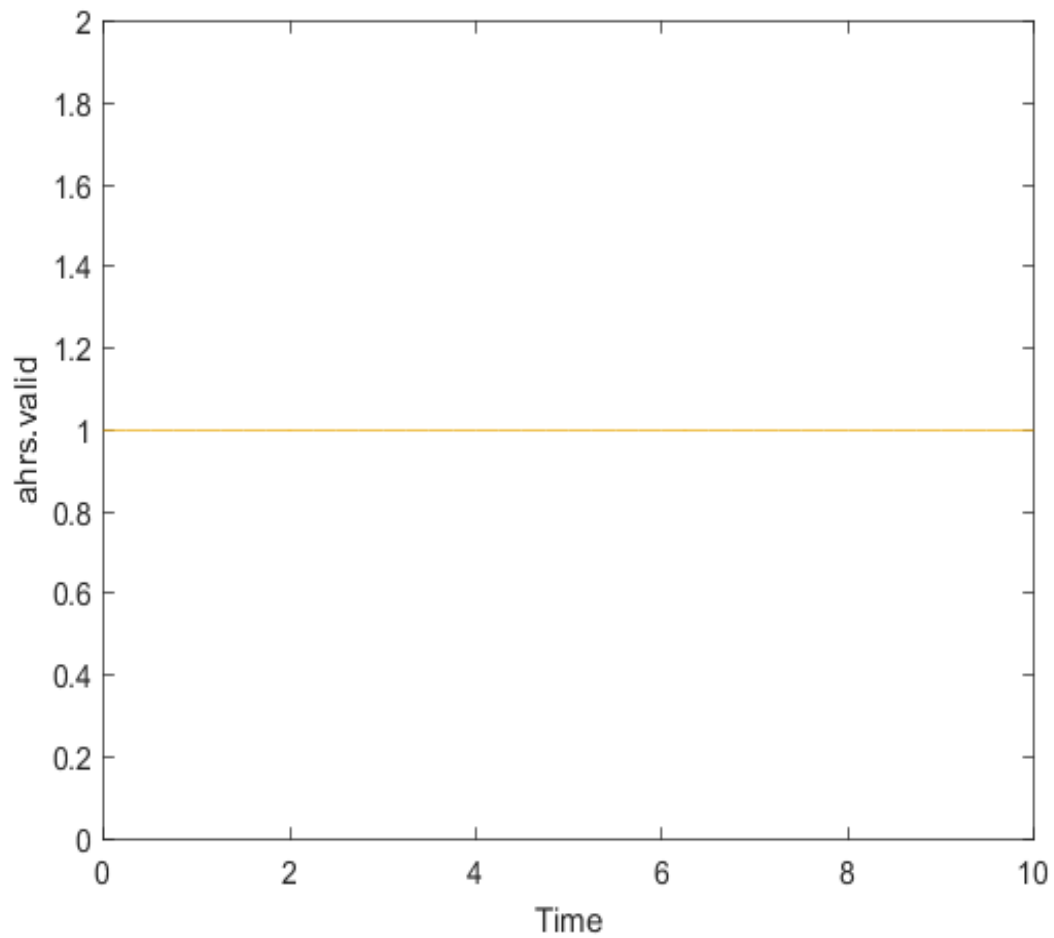
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Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.r	double	deg/sec	0.01	zoh	union



[Back to Report Summary](#)[Back to Signal Summary](#)

Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.valid	boolean		0.01	zoh	union



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**Custom Criteria Result Information**

Diagnostic Record:  
Outcome: Passed  
Event: VerificationPassed

-----  
VerificationPassed in custom criteria of sltest.testmanager.TestCase.

-----

Framework Diagnostic:

verifyLessThanOrEqualTo passed.

Actual Value:

-0.890182567235976

Maximum Value (Inclusive):

-0.6300000000000000

Diagnostic Record:

Outcome:	Passed
Event:	VerificationPassed

VerificationPassed in custom criteria of sltest.testmanager.TestCase.

Framework Diagnostic:

verifyGreaterThanOrEqual passed.

Actual Value:

-0.994359041515568

Minimum Value (Inclusive):

-1.1000000000000000

Diagnostic Record:

Outcome:	Passed
Event:	VerificationPassed

VerificationPassed in custom criteria of sltest.testmanager.TestCase.

Framework Diagnostic:

verifyGreaterThanOrEqual passed.

Actual Value:  
-0.994359041515568  
Minimum Value (Inclusive):  
-1.0500000000000000

---

Diagnostic Record:  
Outcome: Passed  
Event: VerificationPassed

---

VerificationPassed in custom criteria of sltest.testmanager.TestCase.

---

Framework Diagnostic:

---

verifyLessThanOrEqual passed.

Actual Value:  
-0.989465853237920  
Maximum Value (Inclusive):  
-0.9500000000000000

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## Helicopter Roll Control Test

### Test Result Information

Result Type: Test Suite Result  
Parent: [HeliLoopTest](#)  
Start Time: 31-May-2019 12:52:53  
End Time: 31-May-2019 12:53:43  
Outcome: Total: 2, Passed: 2

### Test Suite Information

Name: Helicopter Roll Control Test

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## SmallPositiveStep

### Test Result Information

Result Type: Test Case Result  
Parent: [Helicopter Roll Control Test](#)  
Start Time: 31-May-2019 12:52:53  
End Time: 31-May-2019 12:53:18  
Outcome: **Passed**  
Description:

Roll step of +1 degree to determine tracking, overshoot and rise time.

### Test Case Information

Name: SmallPositiveStep  
Type: Simulation Test

### Test Case Requirements

Description: SR\_6 : Attitude Rate Tracking Performance (HelicopterSystemRequirements#10)  
Document: [HelicopterSystemRequirements.slreqx](#)

## Simulation

### System Under Test Information

Model: HelicopterSystem  
Simulation Mode: normal  
Configuration Set: Configuration  
Start Time: 0  
Stop Time: 10  
Checksum: 1452374767 2694912940 1796571153 1815399691  
Simulink Version: 9.3  
Model Version: 1.21  
Model Author: bpotter  
Date: Wed May 08 07:15:05 2019  
User ID: bpotter  
Model Path: C:\Users\bpotter\MATLAB\Projects\ARP\_Example\_Project\ARP\_03\_SystemArchitecture\specification\HelicopterSystem.slx  
  
Machine Name: AH-BPOTTER  
Solver Name: ode23t  
Solver Type: Variable-Step

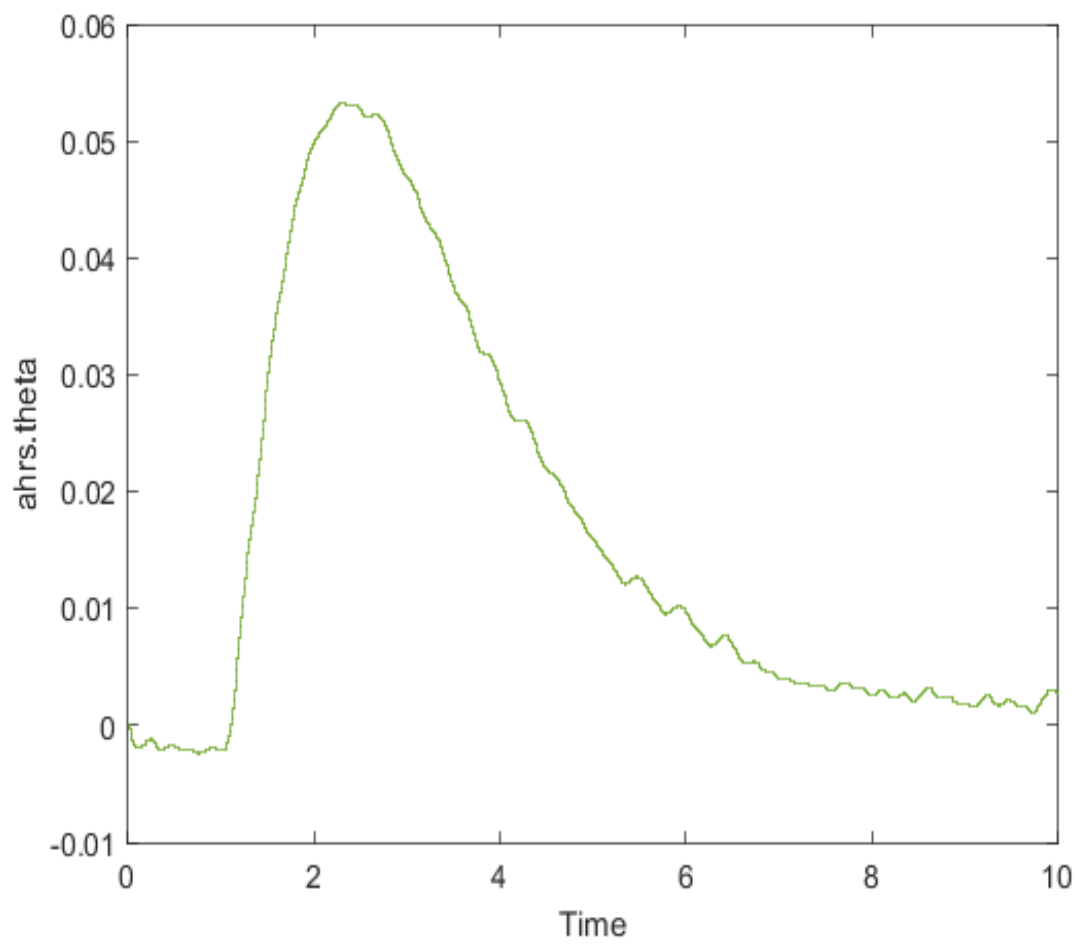


Max Step Size: 0.001  
Simulation Start Time: 2019-05-31 12:52:53  
Simulation Stop Time: 2019-05-31 12:53:17  
Platform: PCWIN64

### Simulation Output

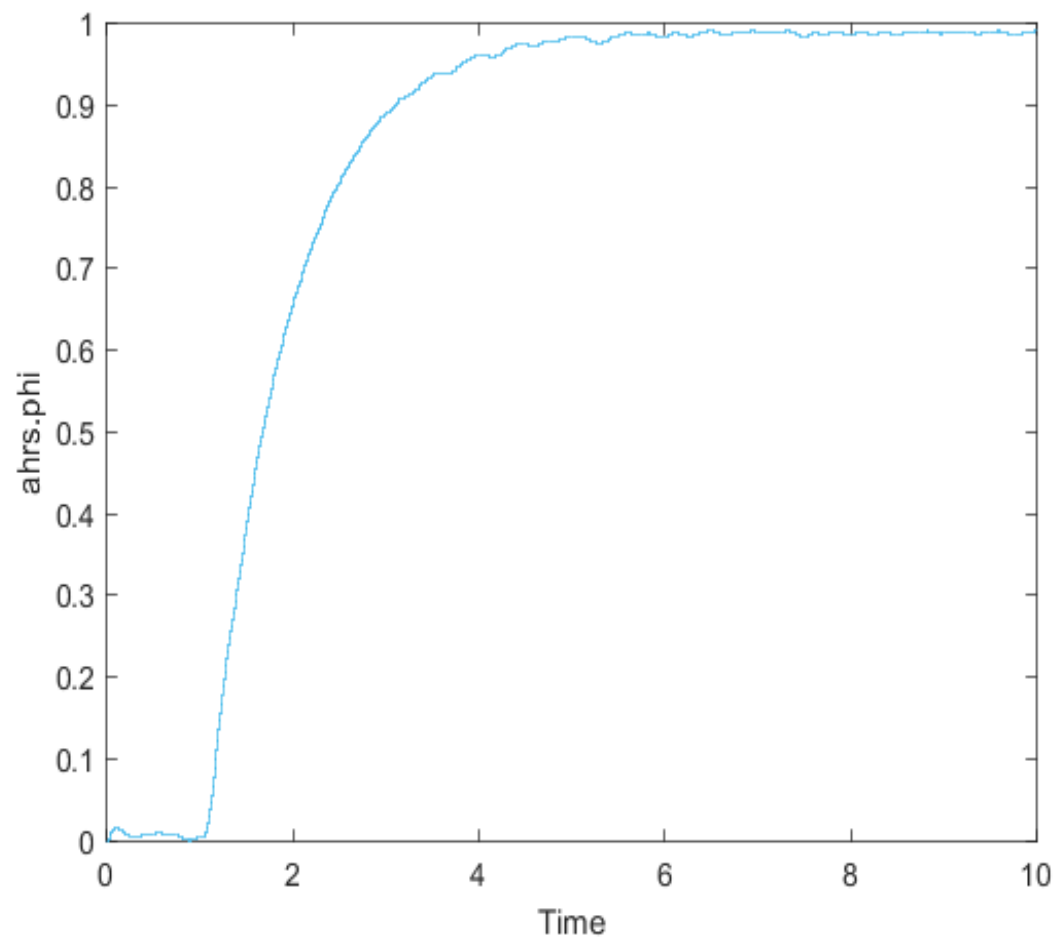
Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
ahrs.theta	double	deg	0.01	zoh	union	<a href="#">Link</a>
ahrs.phi	double	deg	0.01	zoh	union	<a href="#">Link</a>
ahrs.psi	double	deg	0.01	zoh	union	<a href="#">Link</a>
ahrs.q	double	deg/sec	0.01	zoh	union	<a href="#">Link</a>
ahrs.p	double	deg/sec	0.01	zoh	union	<a href="#">Link</a>
ahrs.r	double	deg/sec	0.01	zoh	union	<a href="#">Link</a>
ahrs.valid	boolean		0.01	zoh	union	<a href="#">Link</a>

Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.theta	double	deg	0.01	zoh	union



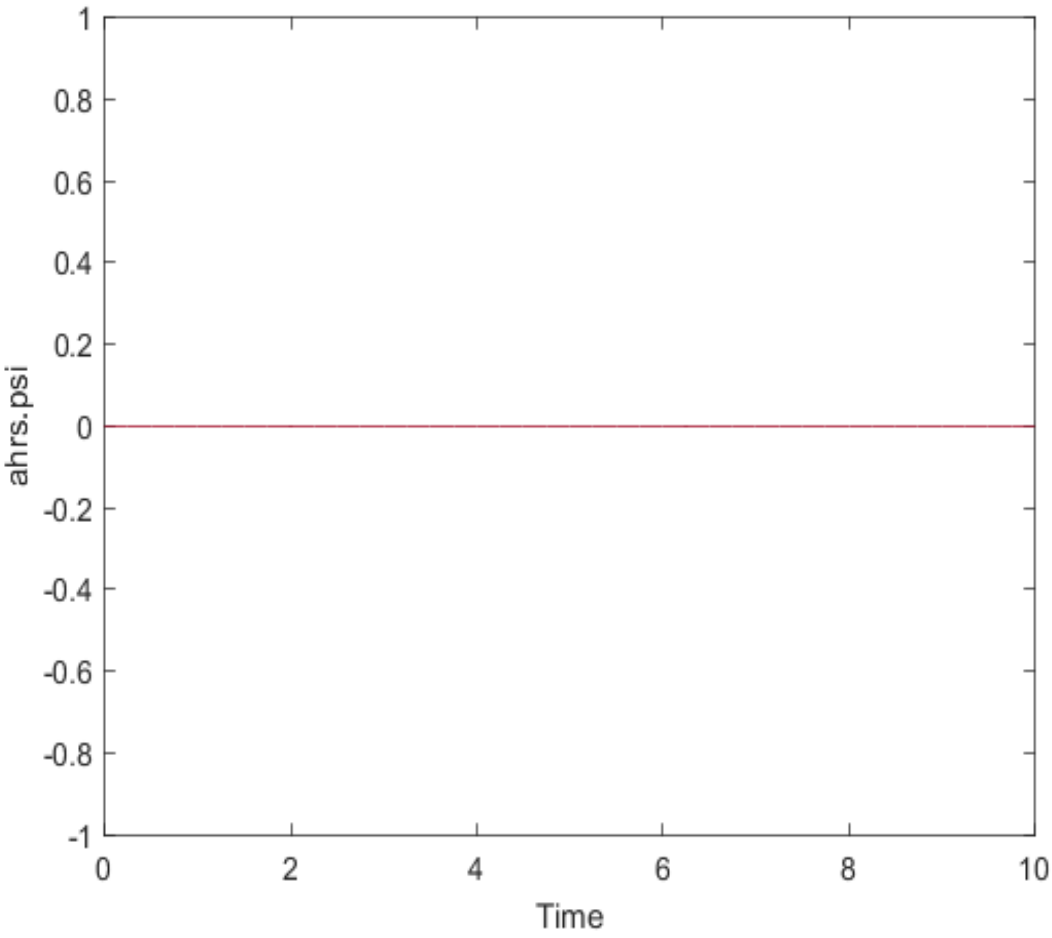
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Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.phi	double	deg	0.01	zoh	union



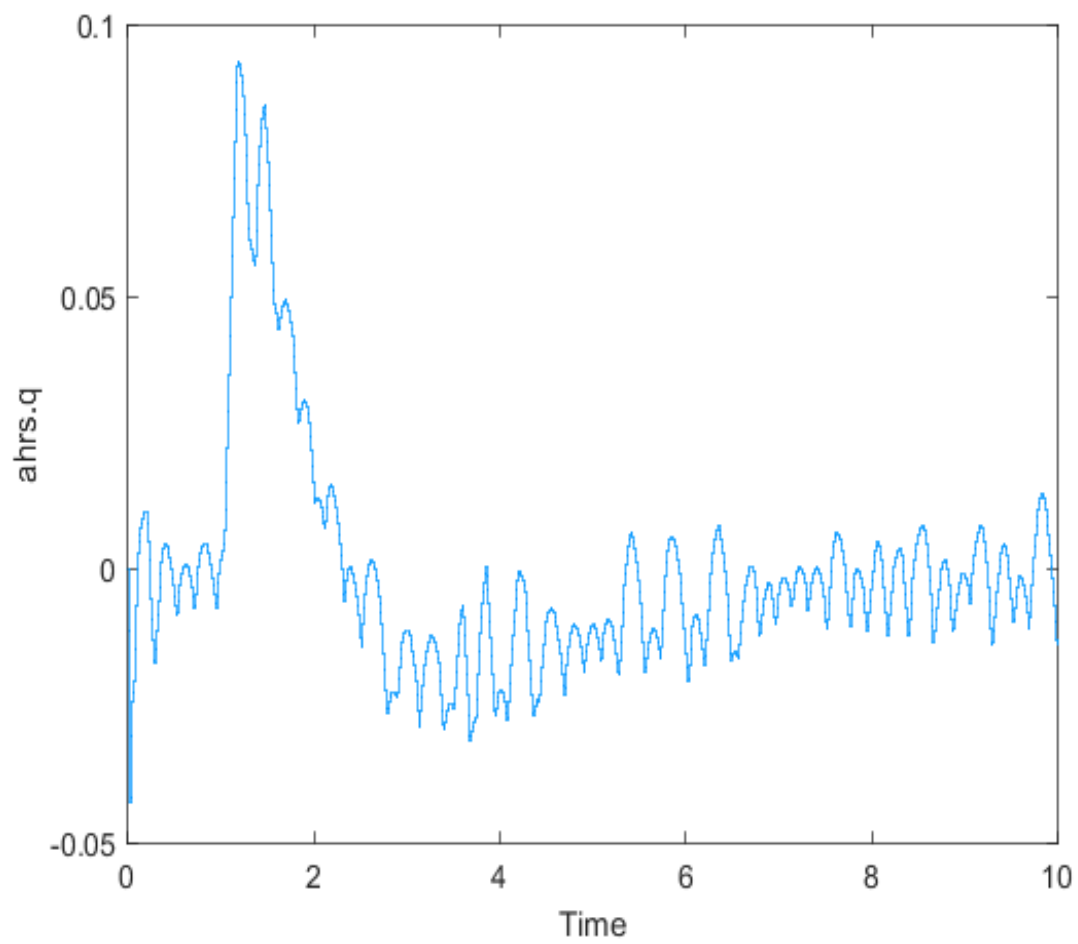
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Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.psi	double	deg	0.01	zoh	union



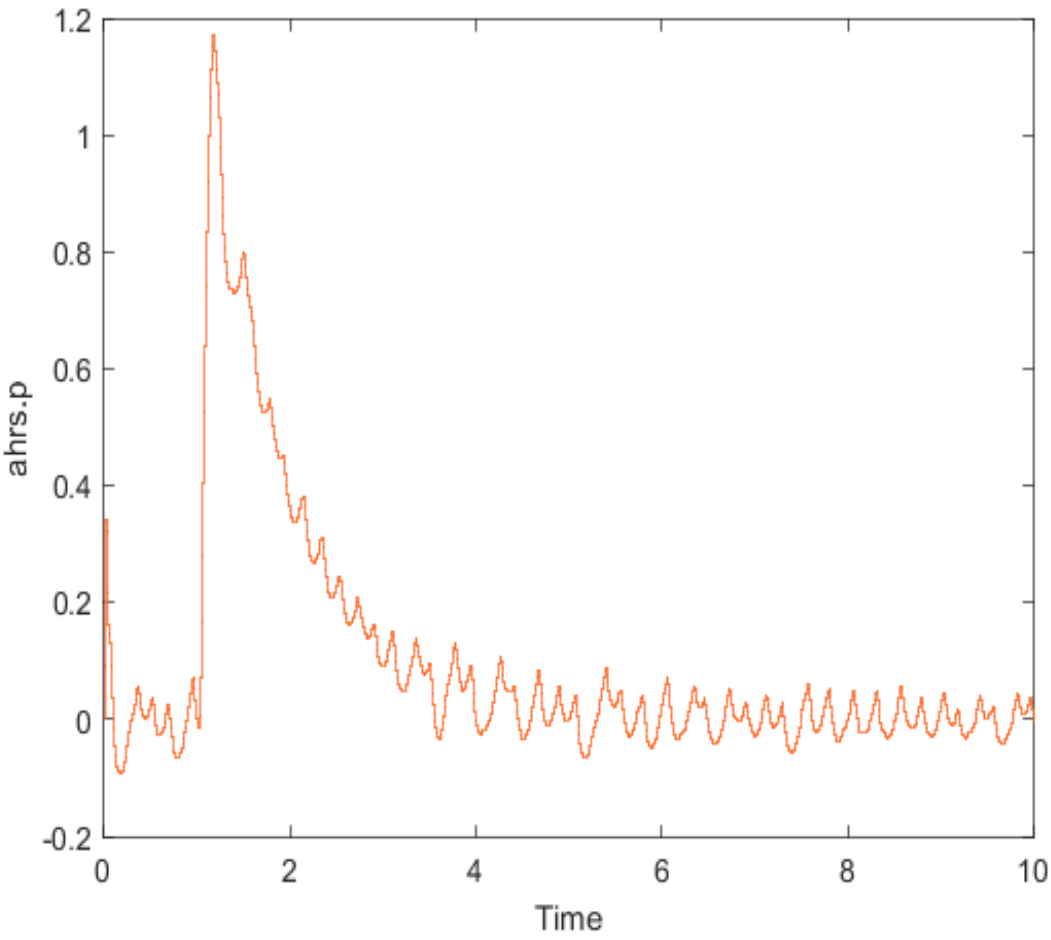
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Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.q	double	deg/sec	0.01	zoh	union



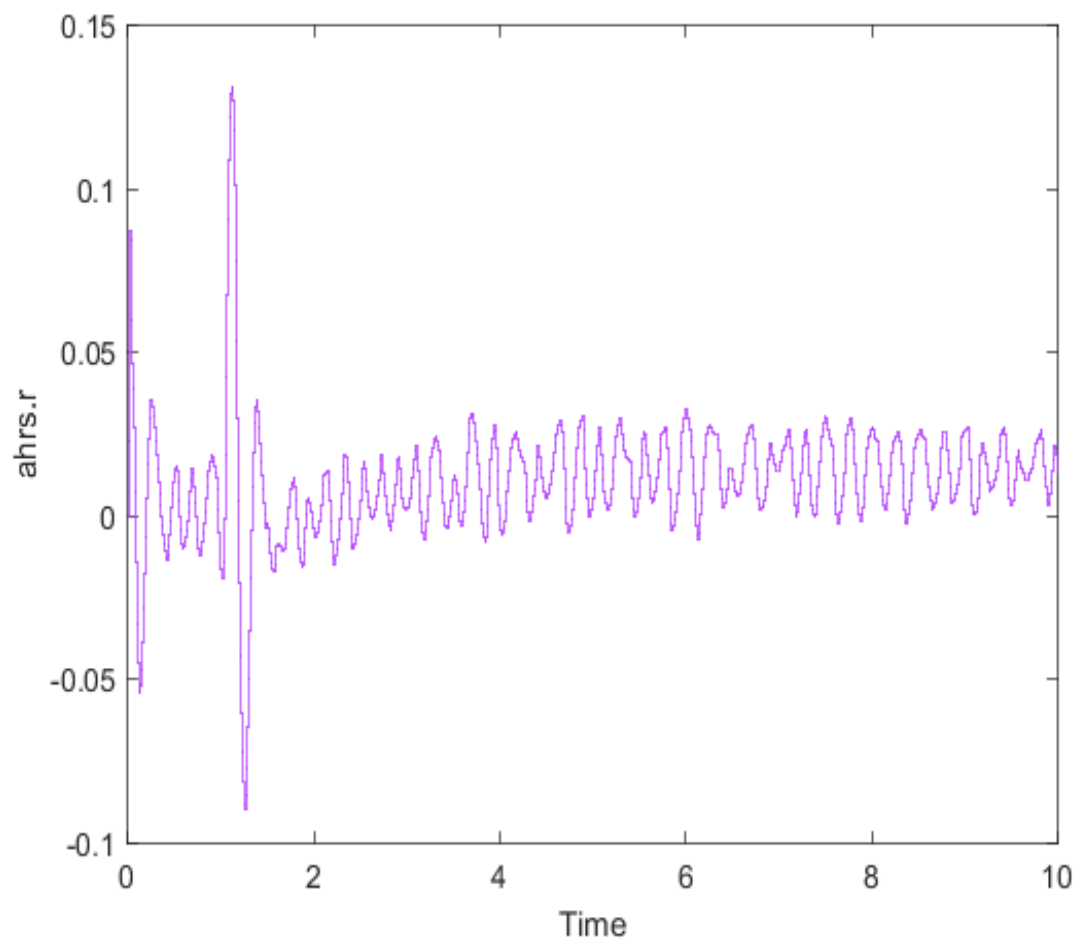
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Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.p	double	deg/sec	0.01	zoh	union



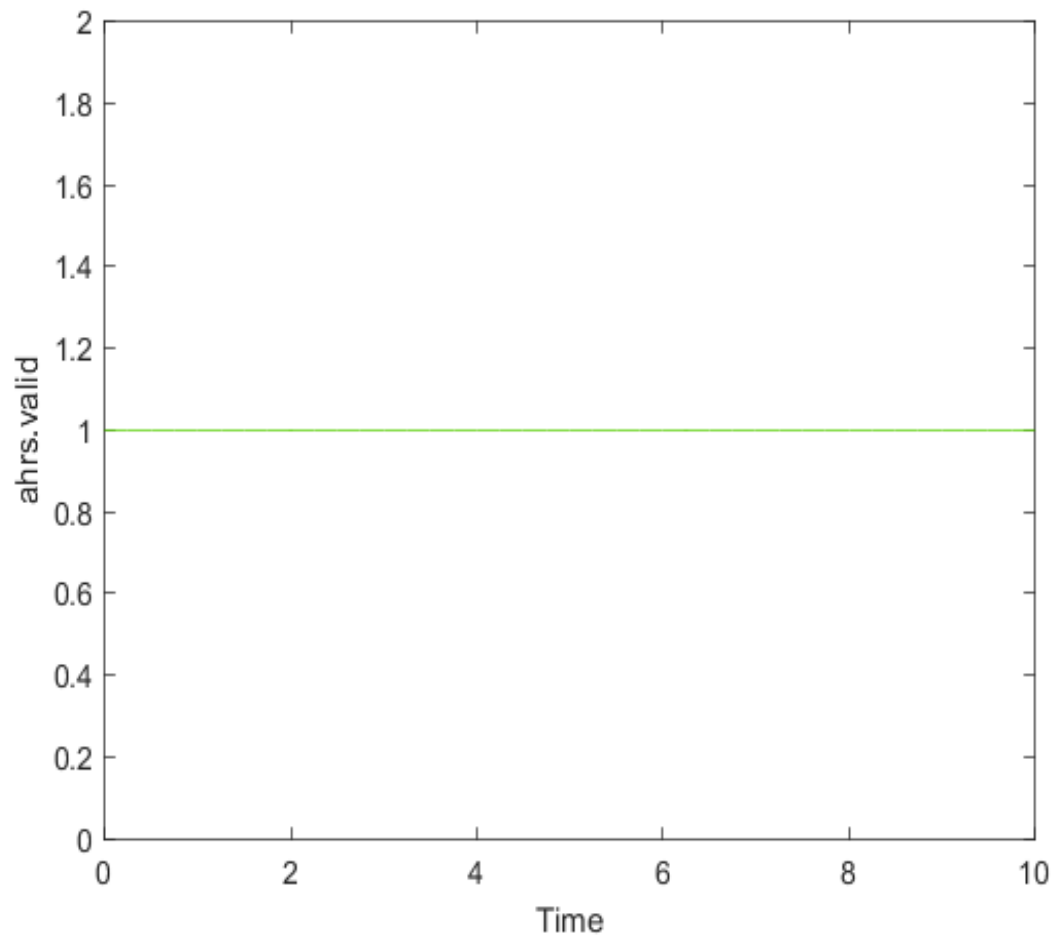
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Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.r	double	deg/sec	0.01	zoh	union



[Back to Report Summary](#)[Back to Signal Summary](#)

Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.valid	boolean		0.01	zoh	union



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**Custom Criteria Result Information**

Diagnostic Record:  
Outcome: Passed  
Event: VerificationPassed

-----  
VerificationPassed in custom criteria of sltest.testmanager.TestCase.  
-----



Framework Diagnostic:

verifyGreaterThanOrEqual passed.

Actual Value:

0.936450362760788

Minimum Value (Inclusive):

0.6300000000000000

Diagnostic Record:

Outcome:	Passed
Event:	VerificationPassed

VerificationPassed in custom criteria of sltest.testmanager.TestCase.

Framework Diagnostic:

verifyLessThanOrEqual passed.

Actual Value:

0.991080483713319

Maximum Value (Inclusive):

1.1000000000000000

Diagnostic Record:

Outcome:	Passed
Event:	VerificationPassed

VerificationPassed in custom criteria of sltest.testmanager.TestCase.

Framework Diagnostic:

verifyGreaterThanOrEqual passed.

Actual Value:  
0.984222626444829  
Minimum Value (Inclusive):  
0.9500000000000000

---

Diagnostic Record:  
Outcome: Passed  
Event: VerificationPassed

---

VerificationPassed in custom criteria of sltest.testmanager.TestCase.

---

Framework Diagnostic:

---

verifyLessThanOrEqual passed.

Actual Value:  
0.990927581653827  
Maximum Value (Inclusive):  
1.0500000000000000

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## SmallNegativeStep

### Test Result Information

Result Type: Test Case Result  
Parent: [Helicopter Roll Control Test](#)  
Start Time: 31-May-2019 12:53:18  
End Time: 31-May-2019 12:53:43  
Outcome: Passed  
Description:

Roll step of -1 degree to determine tracking, overshoot and rise time.

### Test Case Information

Name: SmallNegativeStep

Type: Simulation Test

### Test Case Requirements

Description: SR\_6 : Attitude Rate Tracking Performance (HelicopterSystemRequirements#10)

Document: [HelicopterSystemRequirements.slreqx](#)

### Simulation

#### System Under Test Information

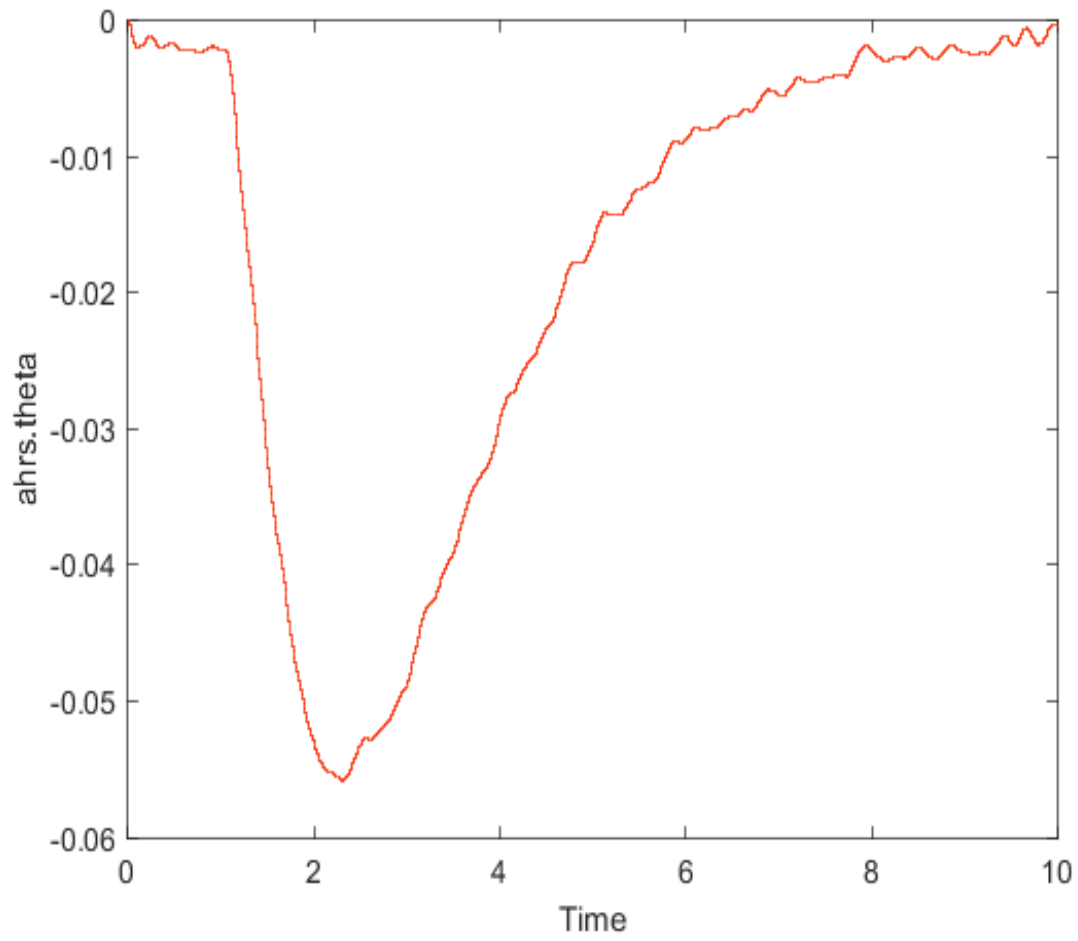
Model: HelicopterSystem  
Simulation Mode: normal  
Configuration Set: Configuration  
Start Time: 0  
Stop Time: 10  
Checksum: 1452374767 2694912940 1796571153 1815399691  
Simulink Version: 9.3  
Model Version: 1.21  
Model Author: bpotter  
Date: Wed May 08 07:15:05 2019  
User ID: bpotter  
Model Path: C:\Users\bpotter\MATLAB\Projects\ARP\_Example\_Project\ARP\_03\_SystemArchitecture\specification\HelicopterSystem.slx  
  
Machine Name: AH-BPOTTER  
Solver Name: ode23t  
Solver Type: Variable-Step  
Max Step Size: 0.001  
Simulation Start Time: 2019-05-31 12:53:19  
Simulation Stop Time: 2019-05-31 12:53:42  
Platform: PCWIN64

#### Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
ahrs.theta	double	deg	0.01	zoh	union	<a href="#">Link</a>
ahrs.phi	double	deg	0.01	zoh	union	<a href="#">Link</a>
ahrs.psi	double	deg	0.01	zoh	union	<a href="#">Link</a>
ahrs.q	double	deg/sec	0.01	zoh	union	<a href="#">Link</a>
ahrs.p	double	deg/sec	0.01	zoh	union	<a href="#">Link</a>

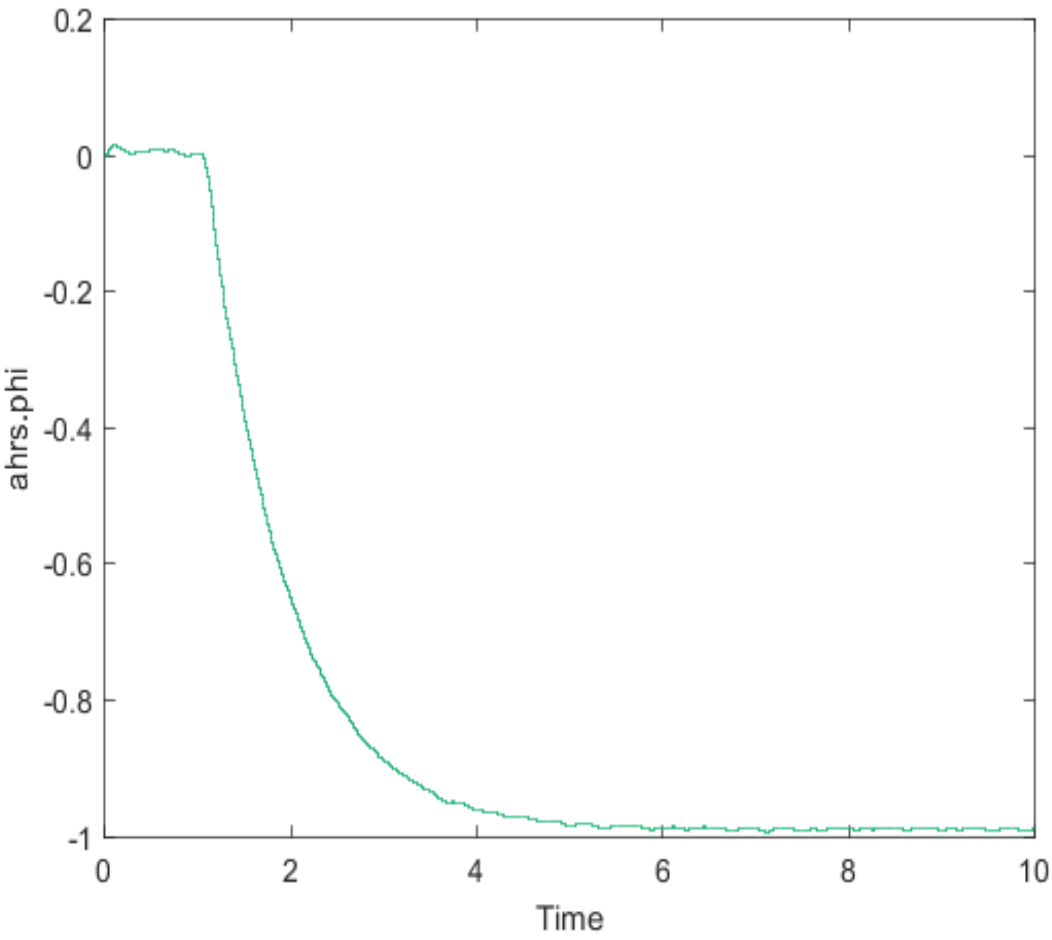
ahrs.r	double	deg/sec	0.01	zoh	union	<a href="#">Link</a>
ahrs.valid	boolean		0.01	zoh	union	<a href="#">Link</a>

Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.theta	double	deg	0.01	zoh	union



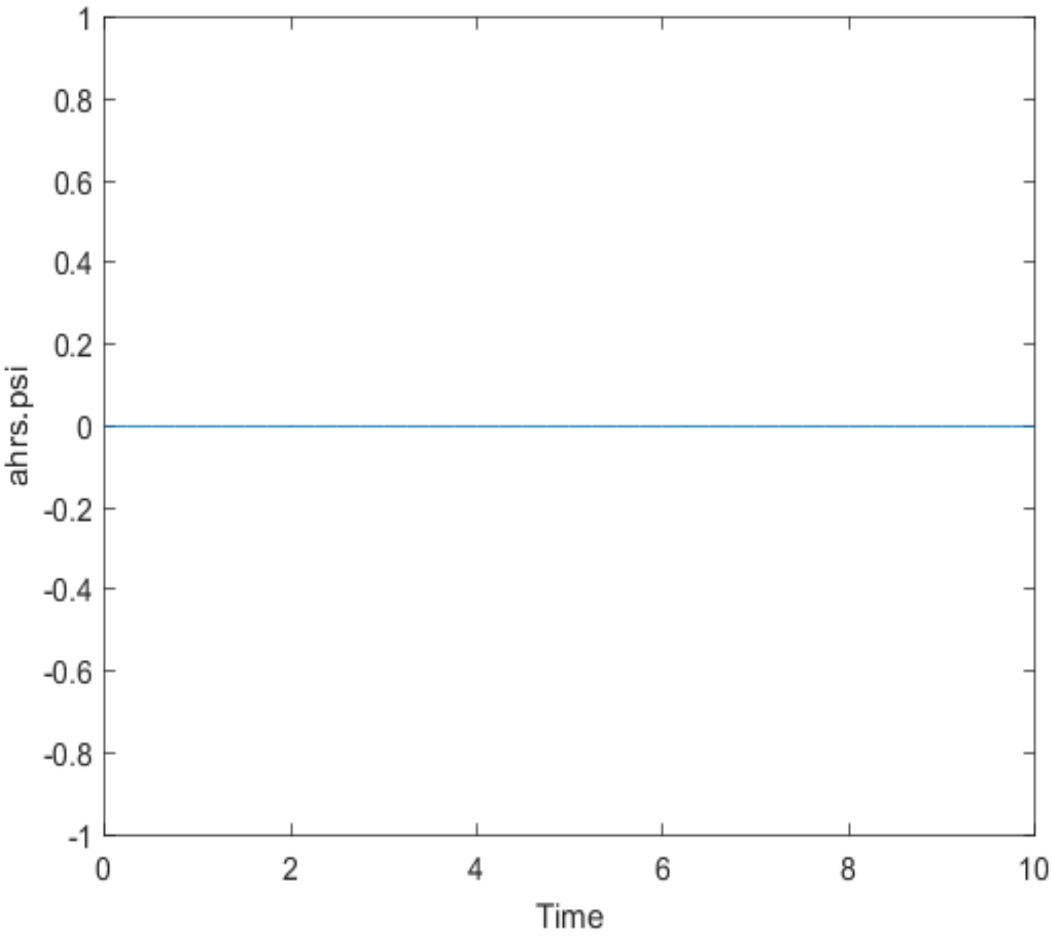
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Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.phi	double	deg	0.01	zoh	union



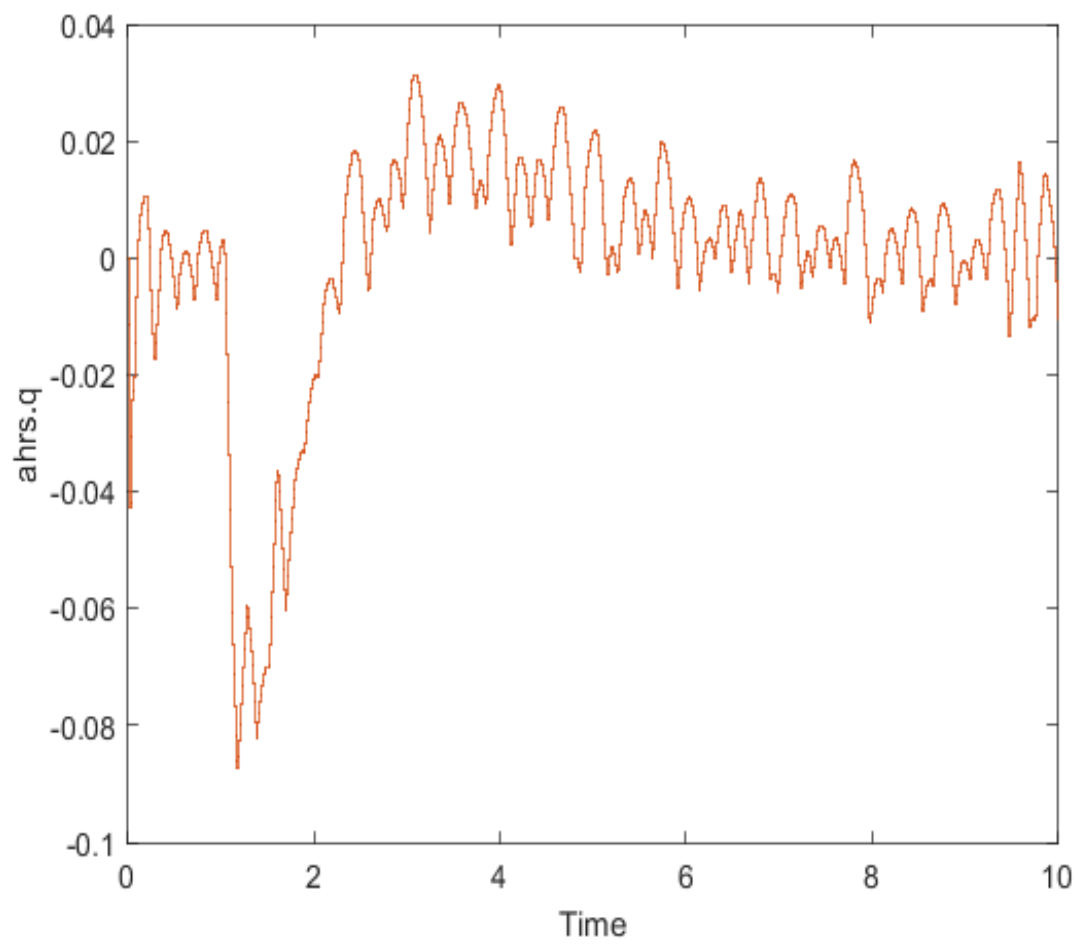
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Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.psi	double	deg	0.01	zoh	union



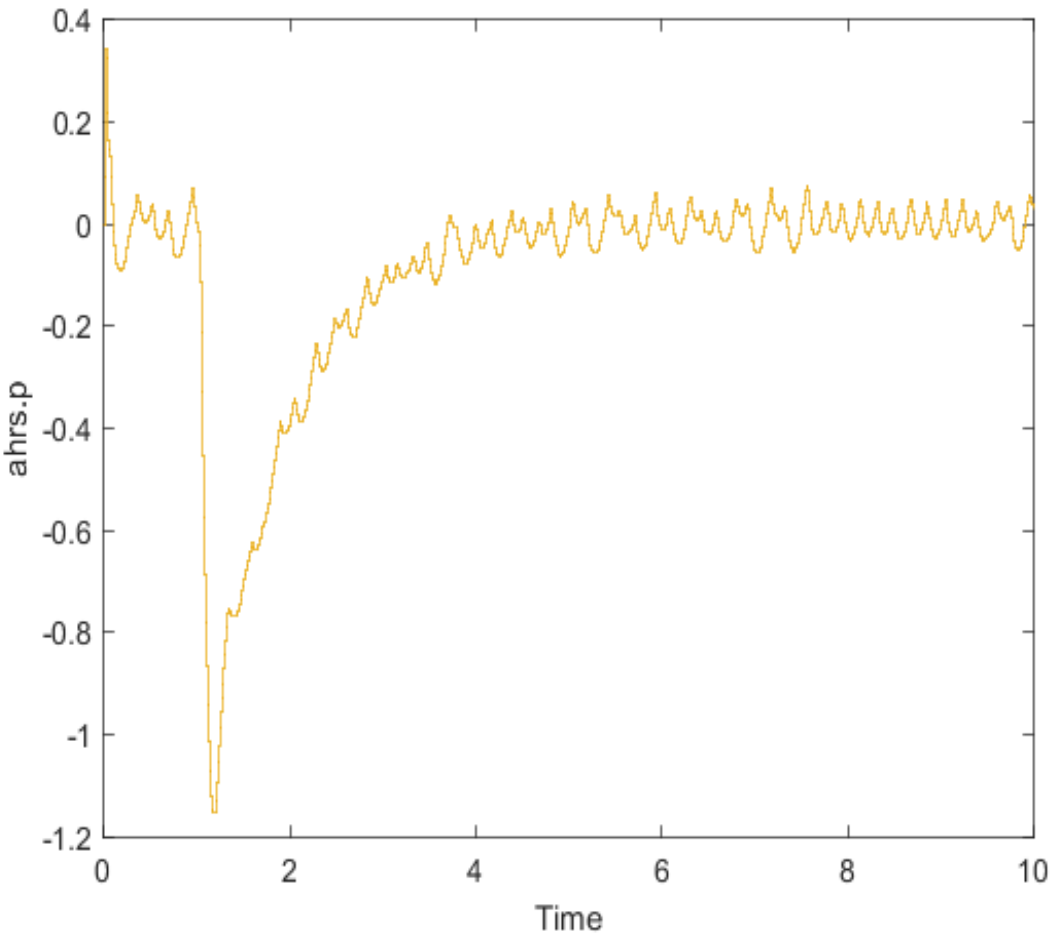
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Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.q	double	deg/sec	0.01	zoh	union



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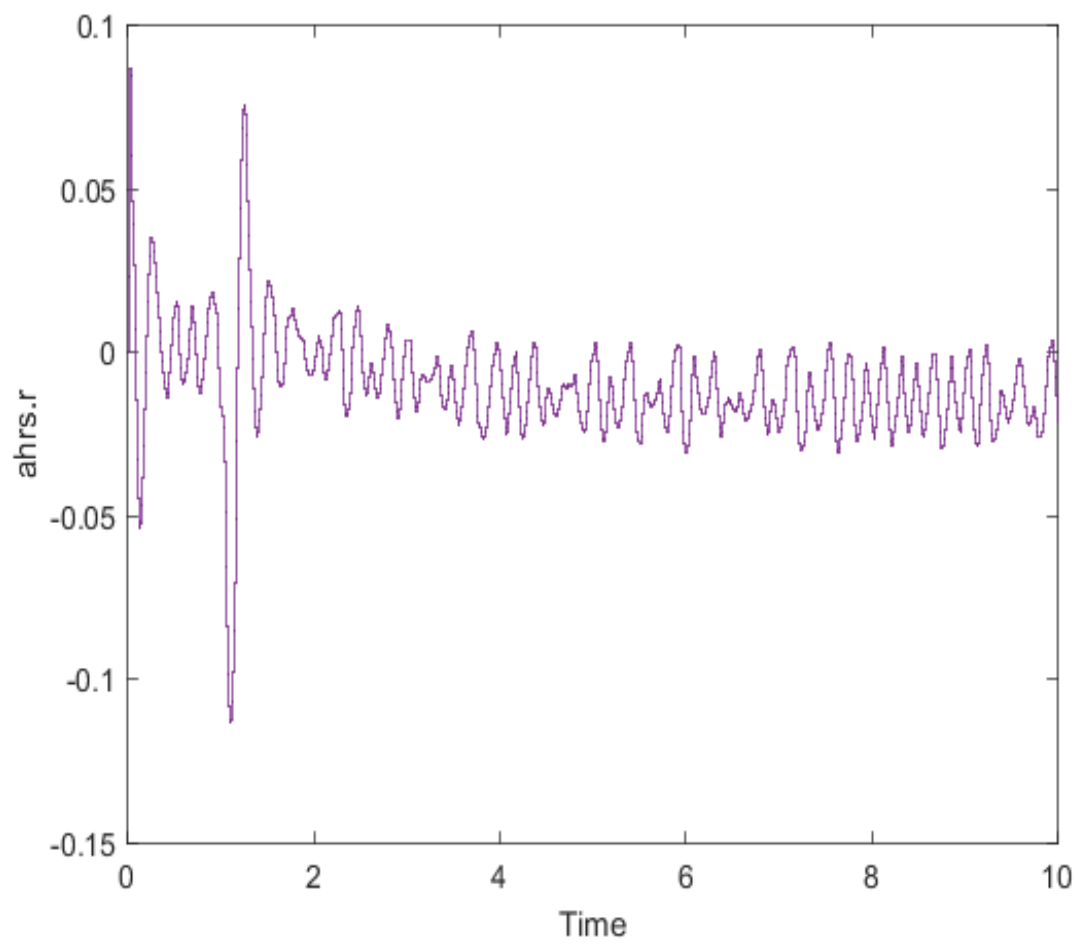
Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.p	double	deg/sec	0.01	zoh	union



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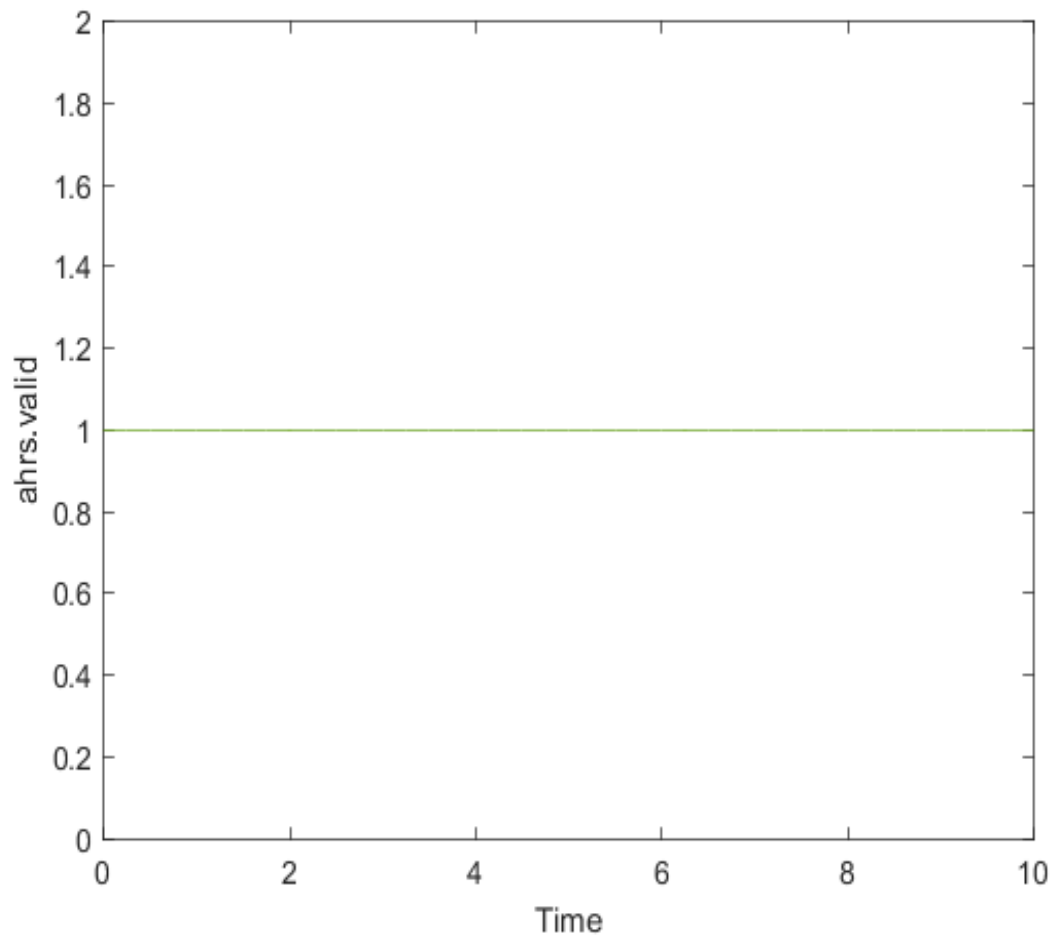


Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.r	double	deg/sec	0.01	zoh	union



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Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.valid	boolean		0.01	zoh	union



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**Custom Criteria Result Information**

Diagnostic Record:  
Outcome: Passed  
Event: VerificationPassed

-----  
VerificationPassed in custom criteria of sltest.testmanager.TestCase.

-----

Framework Diagnostic:

verifyLessThanOrEqualTo passed.

Actual Value:

-0.933227461386989

Maximum Value (Inclusive):

-0.6300000000000000

Diagnostic Record:

Outcome:	Passed
Event:	VerificationPassed

VerificationPassed in custom criteria of sltest.testmanager.TestCase.

Framework Diagnostic:

verifyGreaterThanOrEqual passed.

Actual Value:

-0.993415130118128

Minimum Value (Inclusive):

-1.1000000000000000

Diagnostic Record:

Outcome:	Passed
Event:	VerificationPassed

VerificationPassed in custom criteria of sltest.testmanager.TestCase.

Framework Diagnostic:

verifyGreaterThanOrEqual passed.

Actual Value:  
-0.993415130118128  
Minimum Value (Inclusive):  
-1.0500000000000000

---

Diagnostic Record:  
Outcome: Passed  
Event: VerificationPassed

---

VerificationPassed in custom criteria of sltest.testmanager.TestCase.

---

Framework Diagnostic:

---

verifyLessThanOrEqual passed.

Actual Value:  
-0.987373140799446  
Maximum Value (Inclusive):  
-0.9500000000000000

---

## Helicopter Yaw Control Test

### Test Result Information

Result Type:	Test Suite Result
Parent:	<a href="#">HeliLoopTest</a>
Start Time:	31-May-2019 12:53:43
End Time:	31-May-2019 12:54:34
Outcome:	Total: 2, Passed: 2

### Test Suite Information

Name: Helicopter Yaw Control Test

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---

## SmallPositiveStep

### Test Result Information

Result Type: Test Case Result  
Parent: [Helicopter Yaw Control Test](#)  
Start Time: 31-May-2019 12:53:43  
End Time: 31-May-2019 12:54:09  
Outcome: **Passed**  
Description:

Yaw step of +1 degree/sec to determine tracking, overshoot and rise time.

### Test Case Information

Name: SmallPositiveStep  
Type: Simulation Test

### Test Case Requirements

Description: SR\_6 : Attitude Rate Tracking Performance (HelicopterSystemRequirements#10)  
Document: [HelicopterSystemRequirements.slreqx](#)

## Simulation

### System Under Test Information

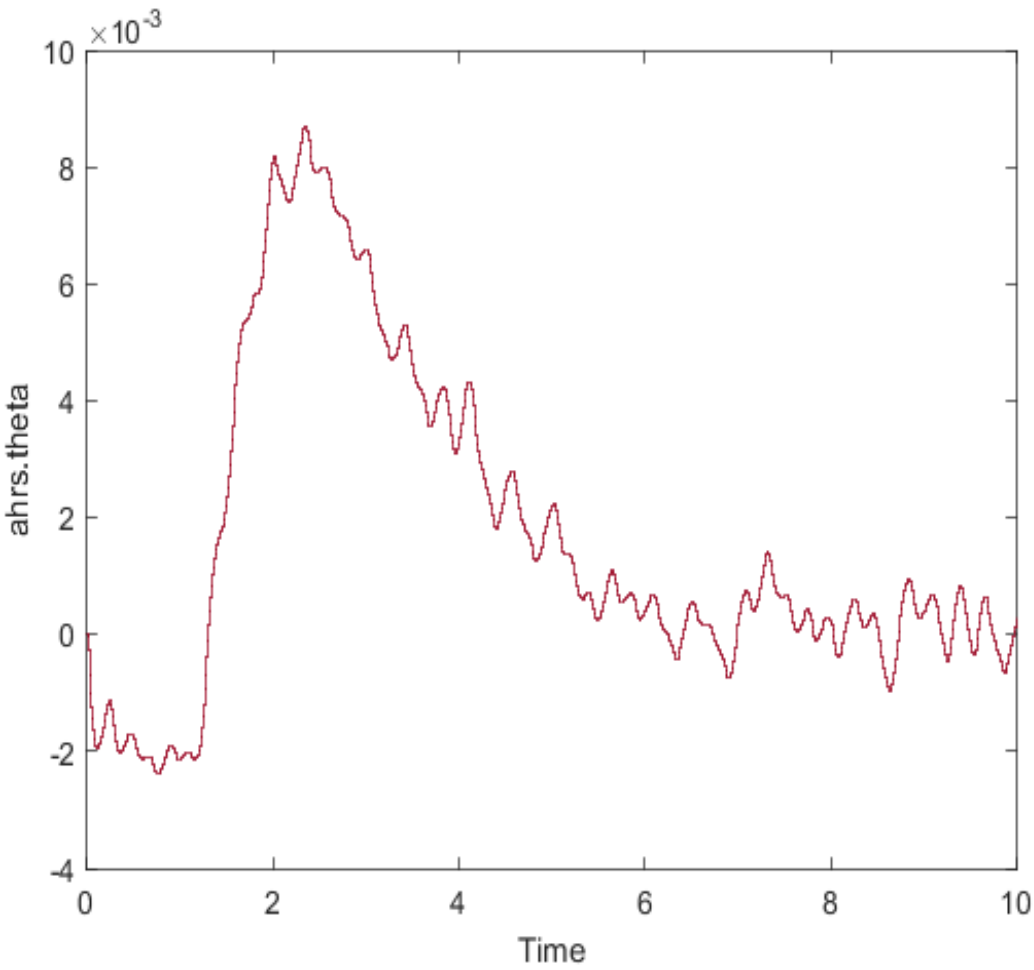
Model: HelicopterSystem  
Simulation Mode: normal  
Configuration Set: Configuration  
Start Time: 0  
Stop Time: 10  
Checksum: 1452374767 2694912940 1796571153 1815399691  
Simulink Version: 9.3  
Model Version: 1.21  
Model Author: bpotter  
Date: Wed May 08 07:15:05 2019  
User ID: bpotter  
Model Path: C:\Users\bpotter\MATLAB\Projects\ARP\_Example\_Project\ARP\_03\_SystemArchitecture\specification\HelicopterSystem.slx  
  
Machine Name: AH-BPOTTER  
Solver Name: ode23t  
Solver Type: Variable-Step

Max Step Size: 0.001  
Simulation Start Time: 2019-05-31 12:53:44  
Simulation Stop Time: 2019-05-31 12:54:08  
Platform: PCWIN64

### Simulation Output

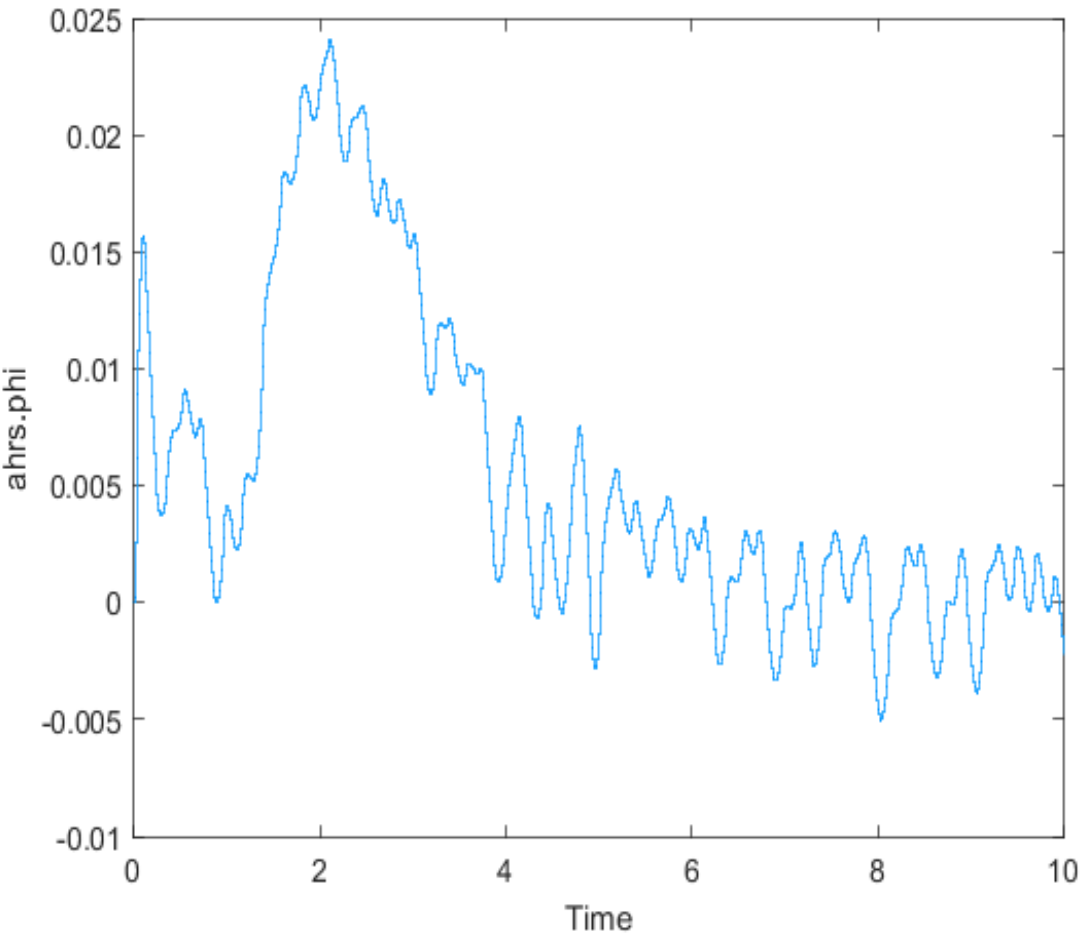
Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
ahrs.theta	double	deg	0.01	zoh	union	<a href="#">Link</a>
ahrs.phi	double	deg	0.01	zoh	union	<a href="#">Link</a>
ahrs.psi	double	deg	0.01	zoh	union	<a href="#">Link</a>
ahrs.q	double	deg/sec	0.01	zoh	union	<a href="#">Link</a>
ahrs.p	double	deg/sec	0.01	zoh	union	<a href="#">Link</a>
ahrs.r	double	deg/sec	0.01	zoh	union	<a href="#">Link</a>
ahrs.valid	boolean		0.01	zoh	union	<a href="#">Link</a>

Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.theta	double	deg	0.01	zoh	union



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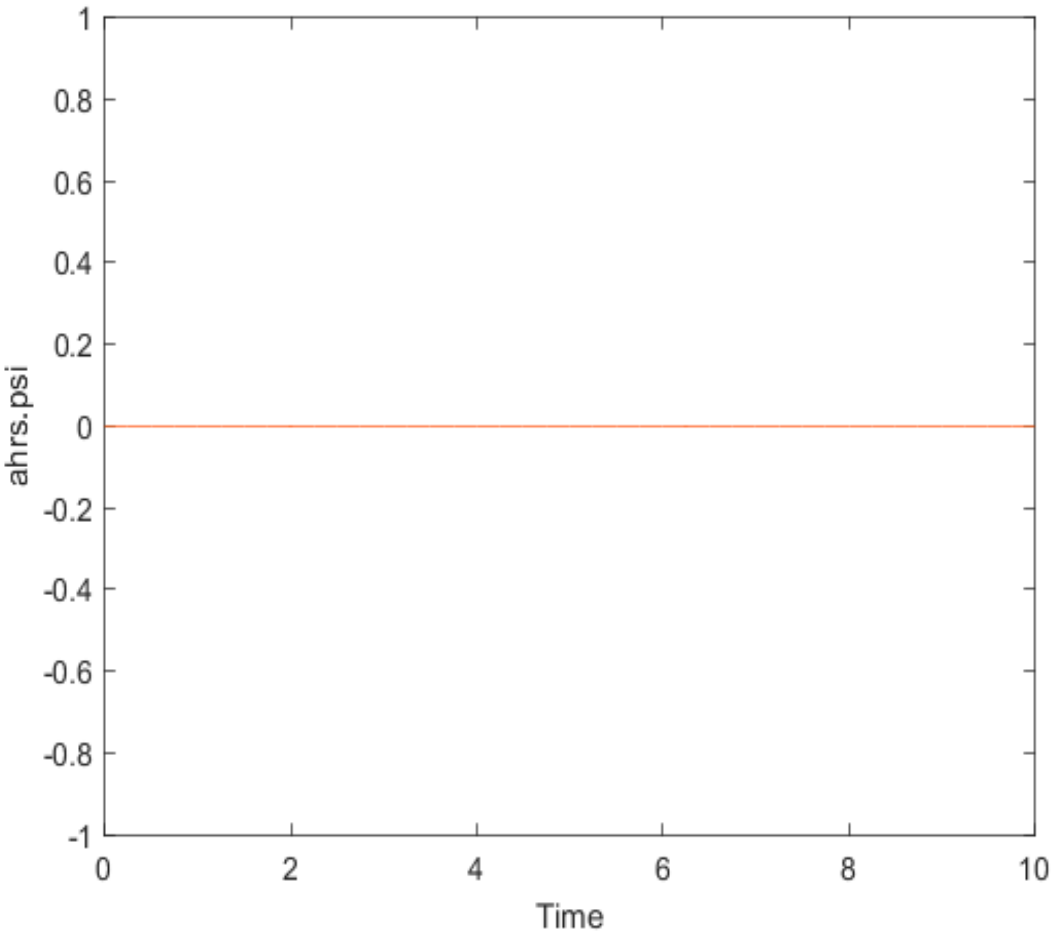
Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.phi	double	deg	0.01	zoh	union



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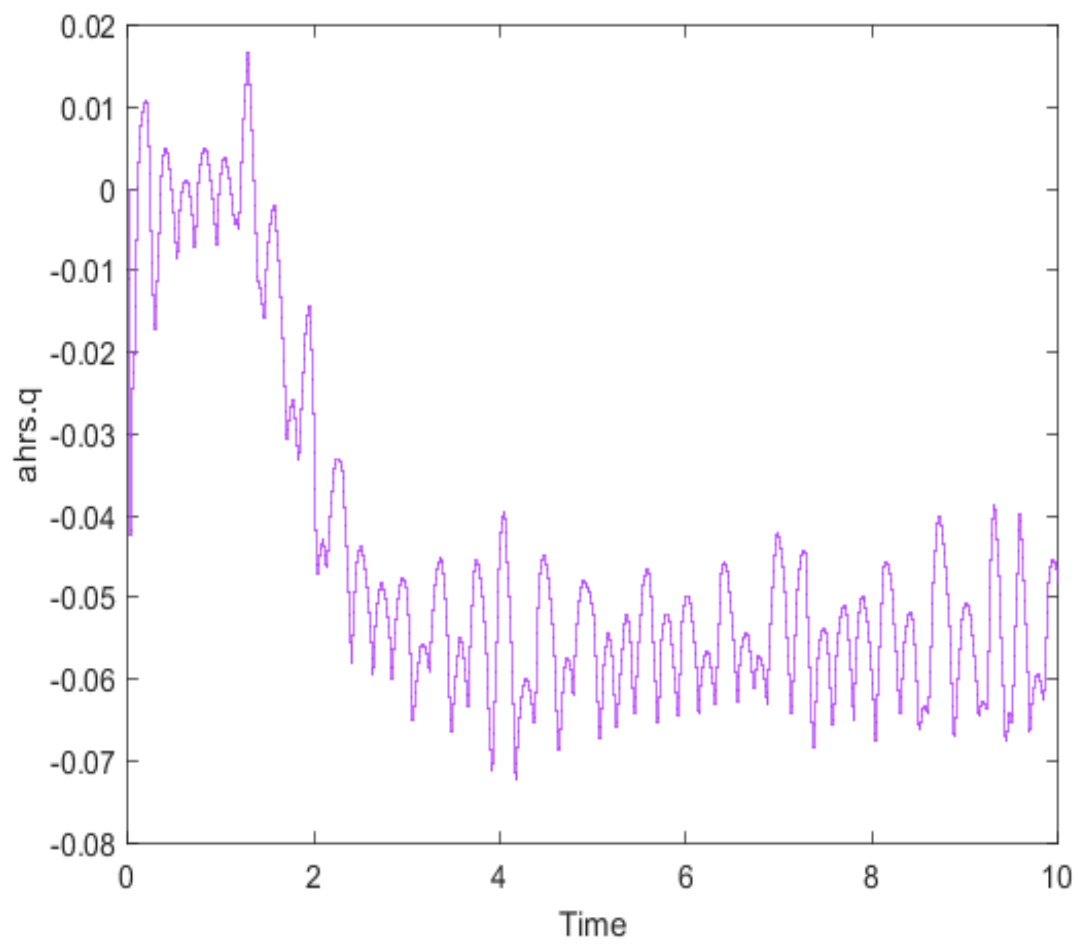


Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.psi	double	deg	0.01	zoh	union



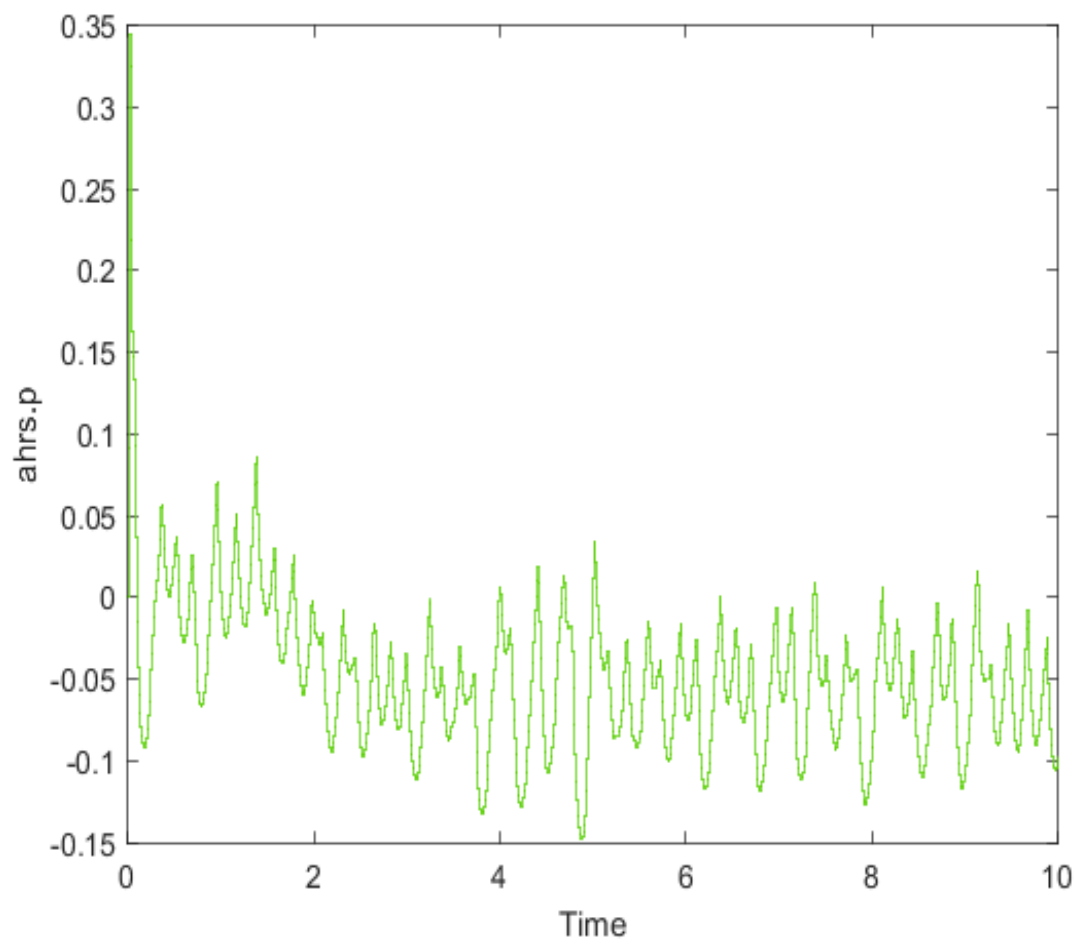
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Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.q	double	deg/sec	0.01	zoh	union



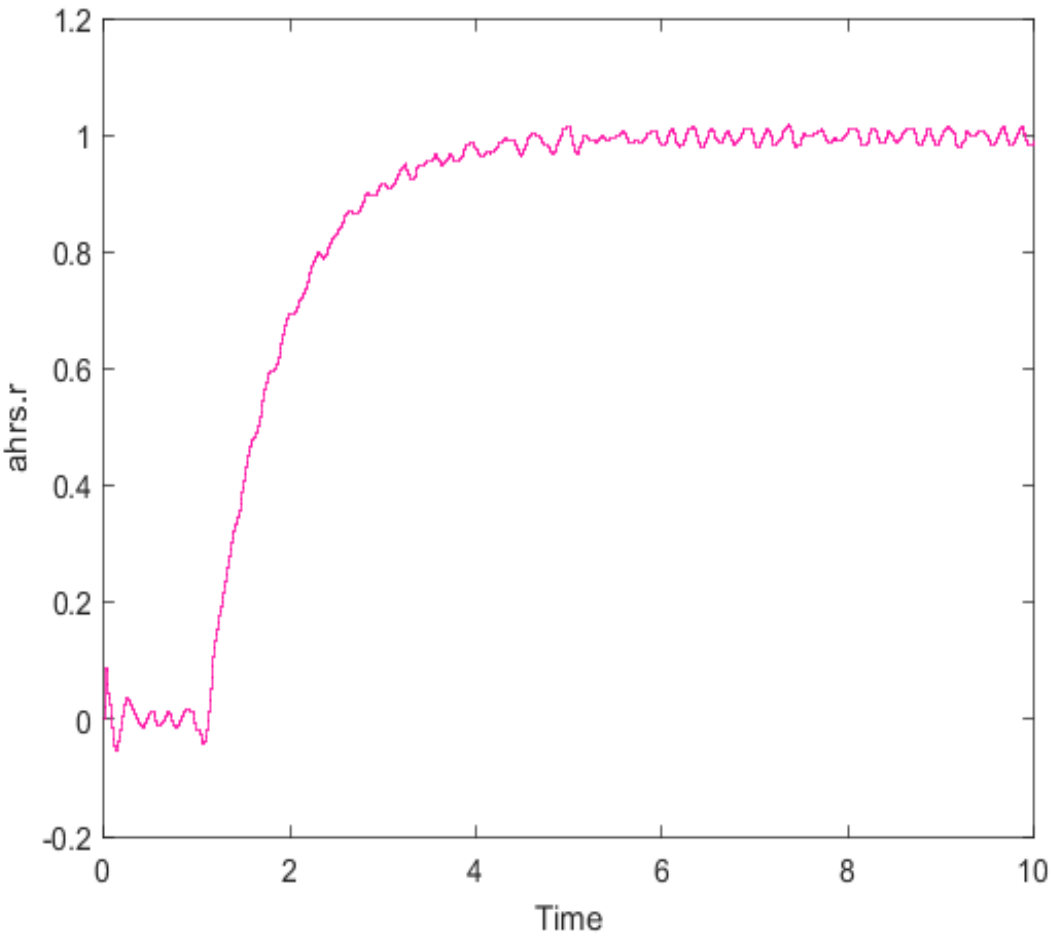
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Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.p	double	deg/sec	0.01	zoh	union



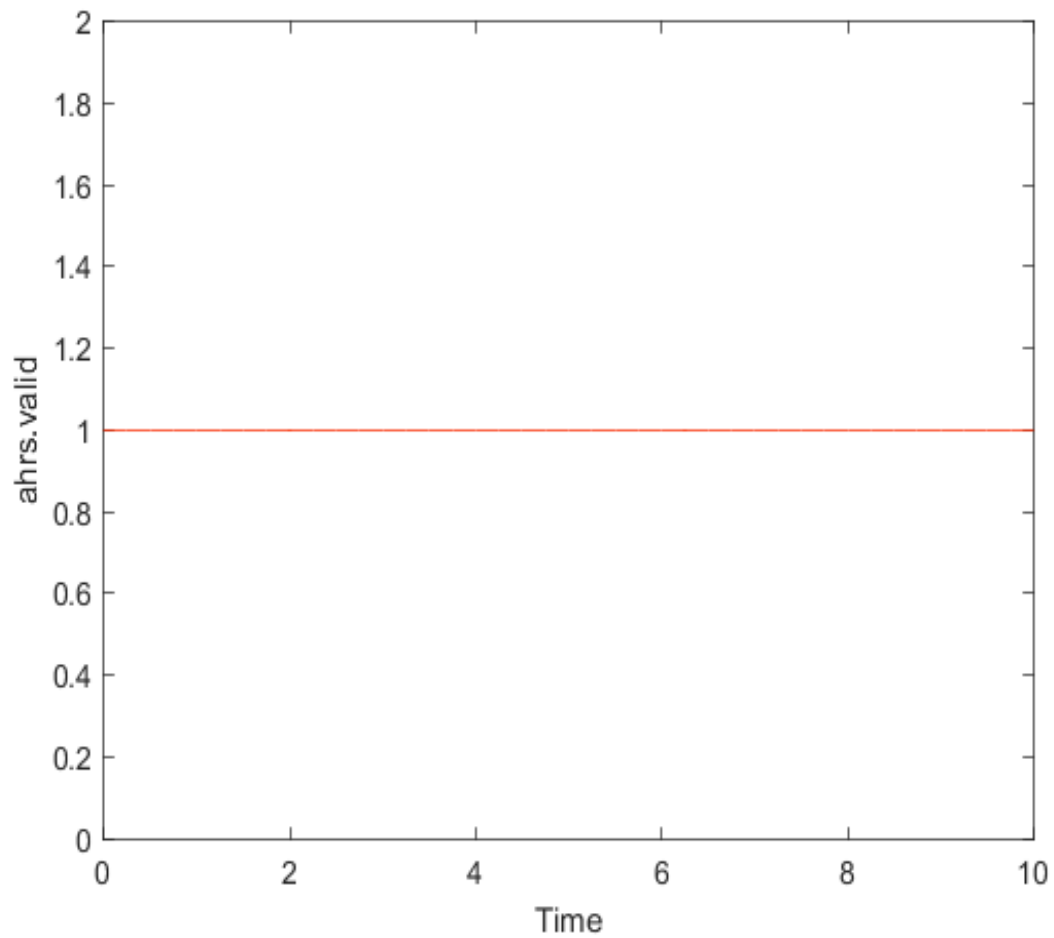
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Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.r	double	deg/sec	0.01	zoh	union



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Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.valid	boolean		0.01	zoh	union



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**Custom Criteria Result Information**

Diagnostic Record:  
Outcome: Passed  
Event: VerificationPassed

-----  
VerificationPassed in custom criteria of sltest.testmanager.TestCase.

-----

Framework Diagnostic:

verifyGreaterThanOrEqual passed.

Actual Value:

0.951174390261090

Minimum Value (Inclusive):

0.6300000000000000

Diagnostic Record:

Outcome:	Passed
Event:	VerificationPassed

VerificationPassed in custom criteria of sltest.testmanager.TestCase.

Framework Diagnostic:

verifyLessThanOrEqual passed.

Actual Value:

1.018645080486781

Maximum Value (Inclusive):

1.1000000000000000

Diagnostic Record:

Outcome:	Passed
Event:	VerificationPassed

VerificationPassed in custom criteria of sltest.testmanager.TestCase.

Framework Diagnostic:

verifyGreaterThanOrEqual passed.

Actual Value:  
0.981488388547740  
Minimum Value (Inclusive):  
0.9500000000000000

---

Diagnostic Record:  
Outcome: Passed  
Event: VerificationPassed

---

VerificationPassed in custom criteria of sltest.testmanager.TestCase.

---

Framework Diagnostic:

---

verifyLessThanOrEqual passed.

Actual Value:  
1.018645080486781  
Maximum Value (Inclusive):  
1.0500000000000000

---

## SmallNegativeStep

### Test Result Information

Result Type: Test Case Result  
Parent: [Helicopter Yaw Control Test](#)  
Start Time: 31-May-2019 12:54:09  
End Time: 31-May-2019 12:54:34  
Outcome: Passed  
Description:

Yaw step of -1 degree/sec to determine tracking, overshoot and rise time.

### Test Case Information

Name: SmallNegativeStep

Type: Simulation Test

### Test Case Requirements

Description: SR\_6 : Attitude Rate Tracking Performance (HelicopterSystemRequirements#10)

Document: [HelicopterSystemRequirements.slreqx](#)

### Simulation

#### System Under Test Information

Model: HelicopterSystem  
Simulation Mode: normal  
Configuration Set: Configuration  
Start Time: 0  
Stop Time: 10  
Checksum: 1452374767 2694912940 1796571153 1815399691  
Simulink Version: 9.3  
Model Version: 1.21  
Model Author: bpotter  
Date: Wed May 08 07:15:05 2019  
User ID: bpotter  
Model Path: C:\Users\bpotter\MATLAB\Projects\ARP\_Example\_Project\ARP\_03\_SystemArchitecture\specification\HelicopterSystem.slx  
  
Machine Name: AH-BPOTTER  
Solver Name: ode23t  
Solver Type: Variable-Step  
Max Step Size: 0.001  
Simulation Start Time: 2019-05-31 12:54:10  
Simulation Stop Time: 2019-05-31 12:54:33  
Platform: PCWIN64

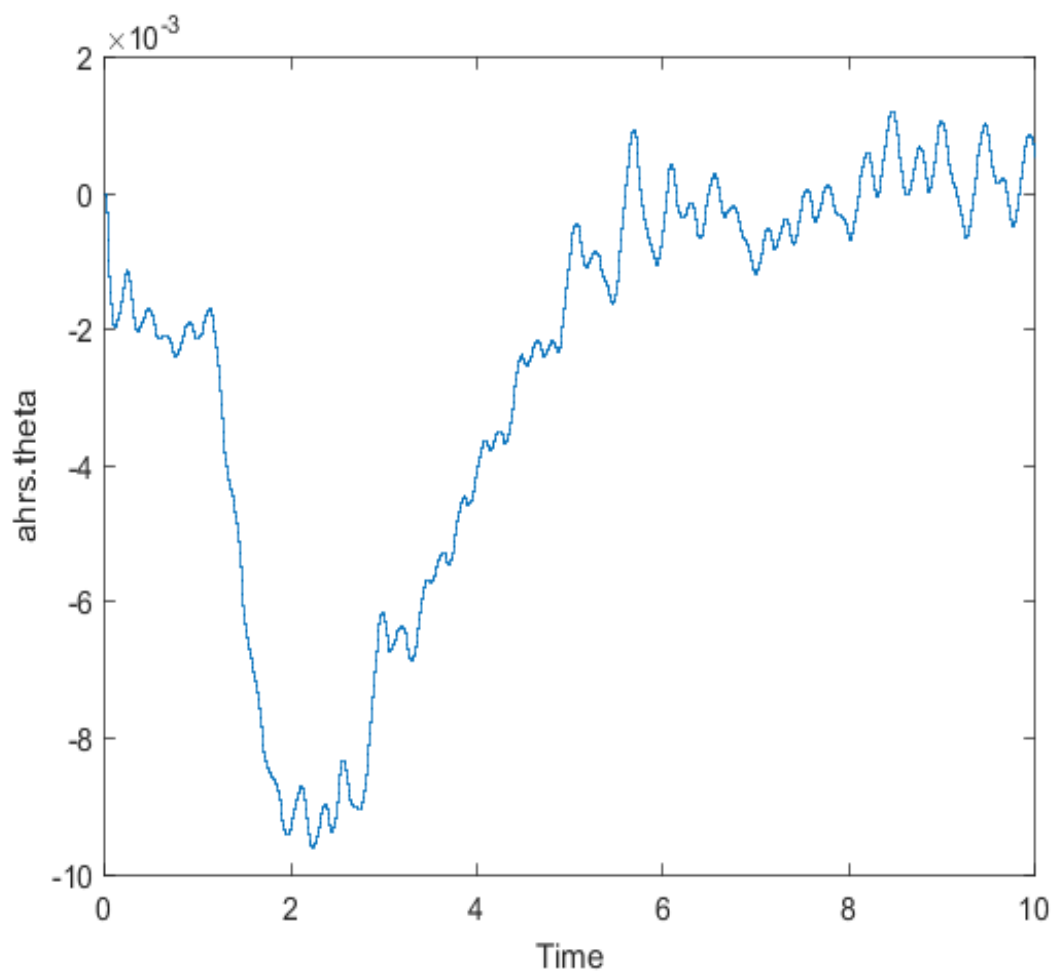
#### Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
ahrs.theta	double	deg	0.01	zoh	union	<a href="#">Link</a>
ahrs.phi	double	deg	0.01	zoh	union	<a href="#">Link</a>
ahrs.psi	double	deg	0.01	zoh	union	<a href="#">Link</a>
ahrs.q	double	deg/sec	0.01	zoh	union	<a href="#">Link</a>
ahrs.p	double	deg/sec	0.01	zoh	union	<a href="#">Link</a>



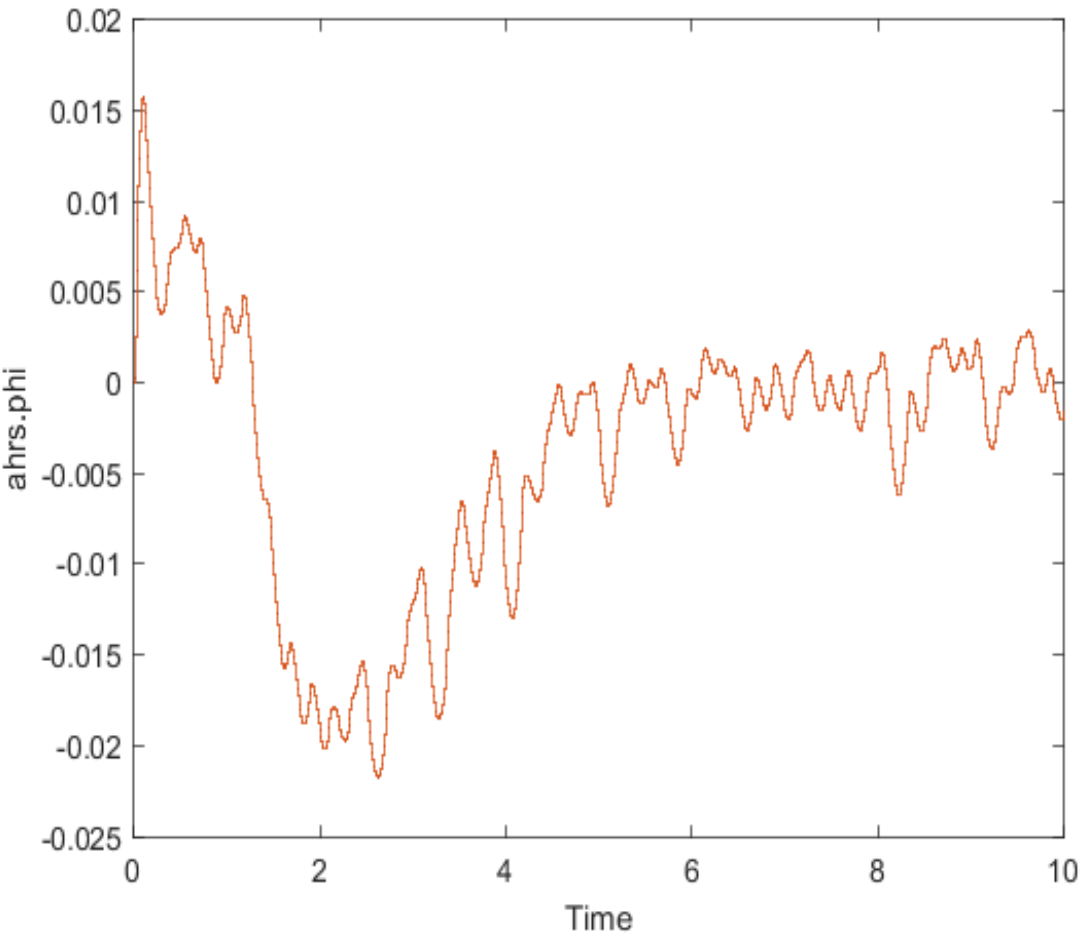
ahrs.r	double	deg/sec	0.01	zoh	union	<a href="#">Link</a>
ahrs.valid	boolean		0.01	zoh	union	<a href="#">Link</a>

Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.theta	double	deg	0.01	zoh	union



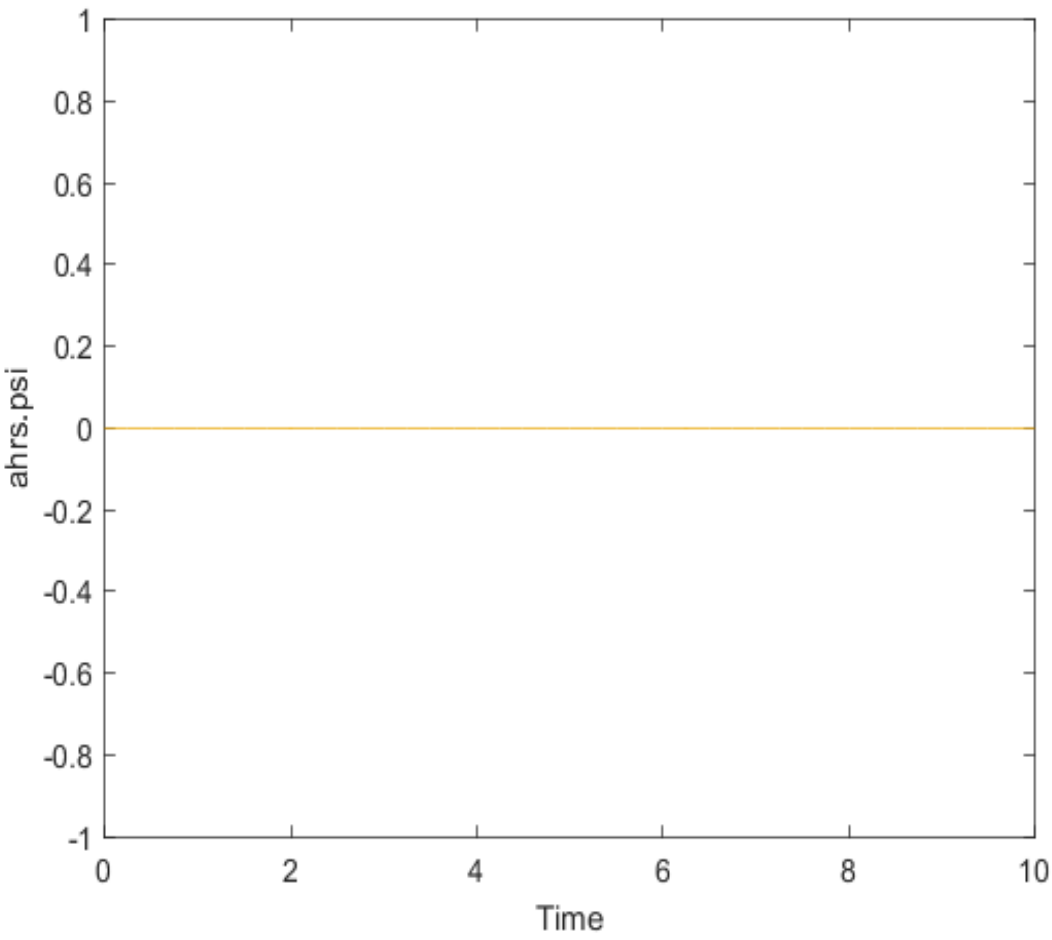
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Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.phi	double	deg	0.01	zoh	union



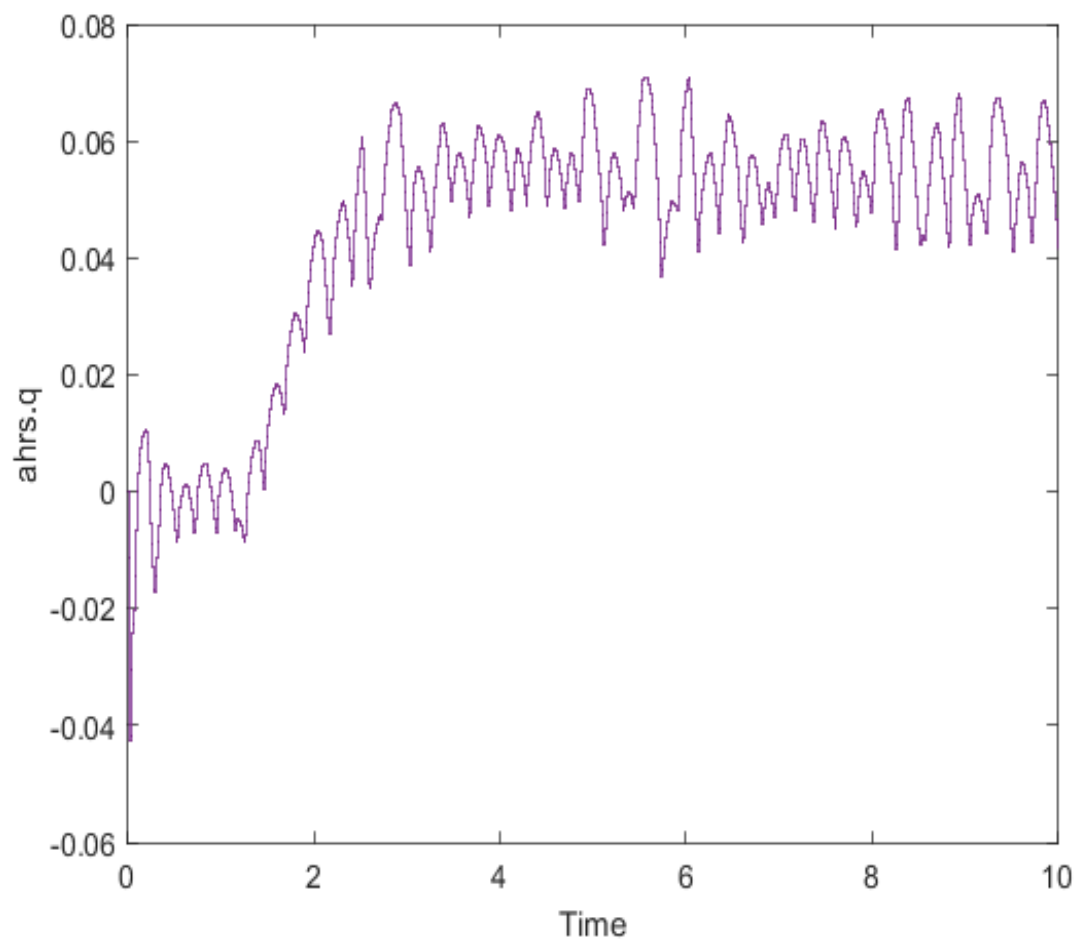
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Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.psi	double	deg	0.01	zoh	union



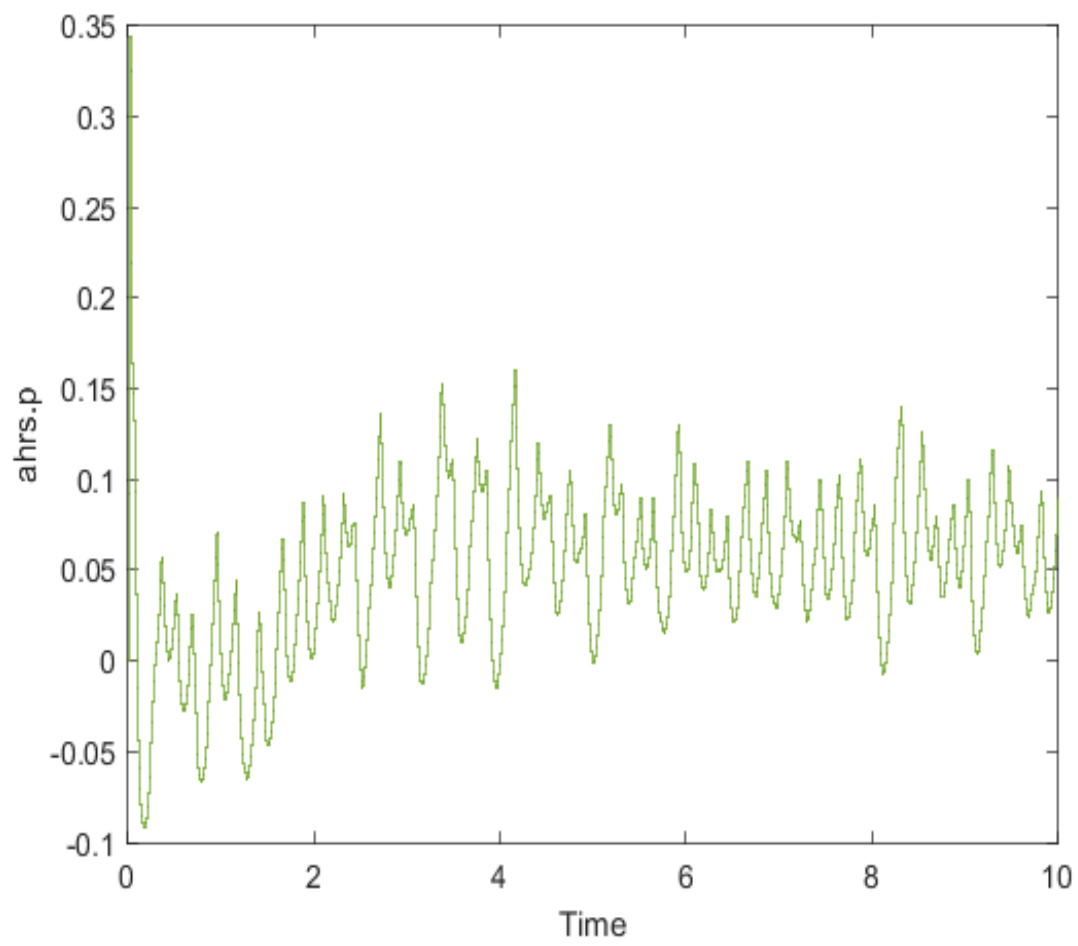
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Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.q	double	deg/sec	0.01	zoh	union



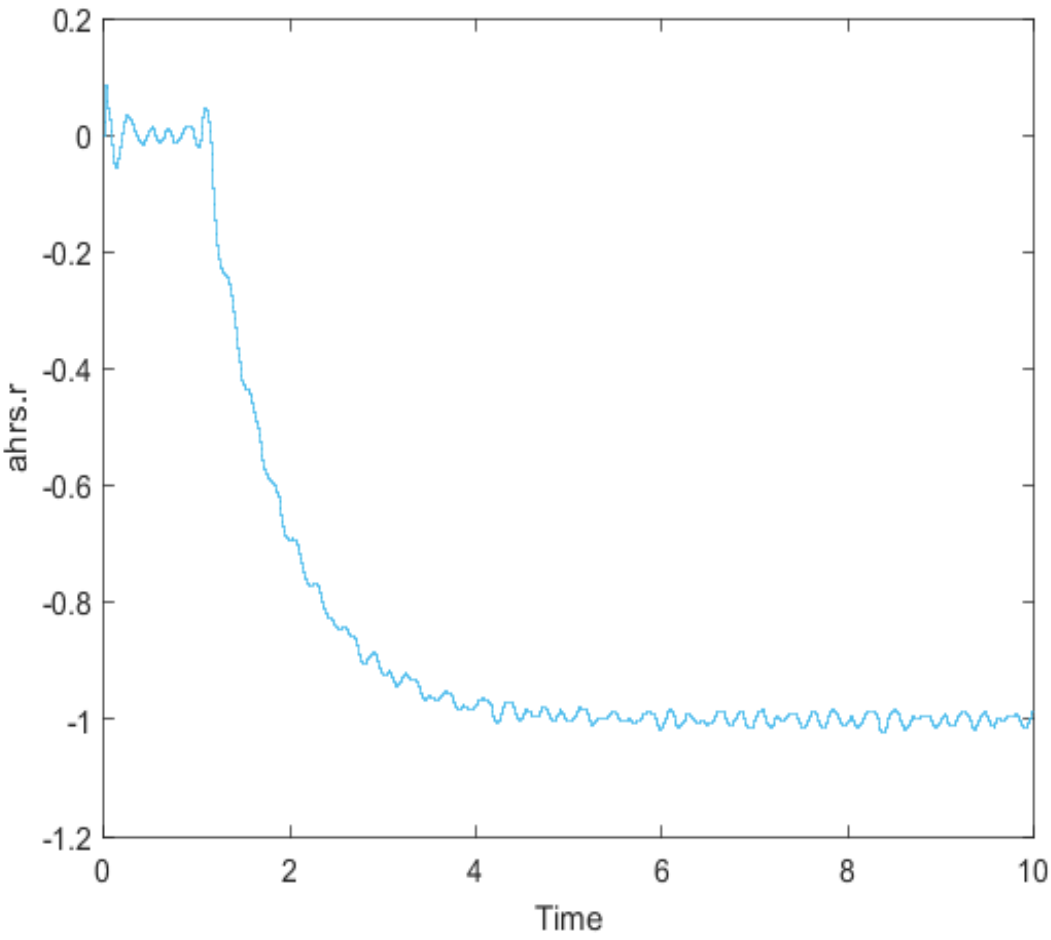
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Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.p	double	deg/sec	0.01	zoh	union



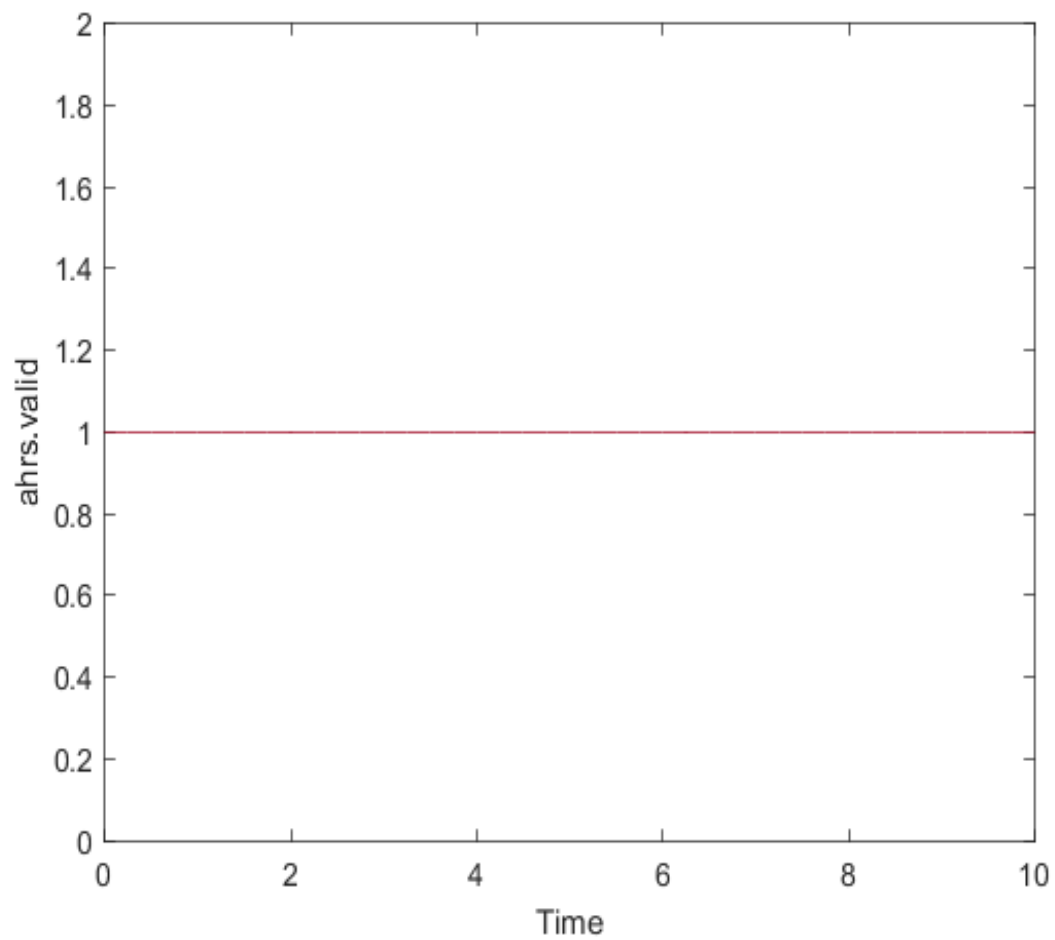
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Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.r	double	deg/sec	0.01	zoh	union



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Name	Data Type	Units	Sample Time	Interp	Sync
ahrs.valid	boolean		0.01	zoh	union



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**Custom Criteria Result Information**

Diagnostic Record:  
Outcome: Passed  
Event: VerificationPassed

-----  
VerificationPassed in custom criteria of sltest.testmanager.TestCase.  
-----

Framework Diagnostic:

verifyLessThanOrEqual passed.

Actual Value:

-0.952898053900316

Maximum Value (Inclusive):

-0.6300000000000000

Diagnostic Record:

Outcome:	Passed
Event:	VerificationPassed

VerificationPassed in custom criteria of sltest.testmanager.TestCase.

Framework Diagnostic:

verifyGreaterThanOrEqual passed.

Actual Value:

-1.022867435958411

Minimum Value (Inclusive):

-1.1000000000000000

Diagnostic Record:

Outcome:	Passed
Event:	VerificationPassed

VerificationPassed in custom criteria of sltest.testmanager.TestCase.

Framework Diagnostic:

verifyGreaterThanOrEqual passed.



Actual Value:  
-1.022867435958411  
Minimum Value (Inclusive):  
-1.0500000000000000

---

Diagnostic Record:  
Outcome: Passed  
Event: VerificationPassed

---

VerificationPassed in custom criteria of sltest.testmanager.TestCase.

---

Framework Diagnostic:

---

verifyLessThanOrEqual passed.

Actual Value:  
-0.981627611193364  
Maximum Value (Inclusive):  
-0.9500000000000000

---