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124 lines - 6 Removals

```

1  """An eclss_pressure model.
2
3  variable :: TypeOfVariable
4
5  (variable) = optional variable
6
7  _____
8  clock                :: Clock
9  => |                  | -> en_needed_pres ::
10 State
11 design                :: DomeSpec
12 => |                  |
13 (available energy)    :: Energy
14 => | EclssPressureEnv |
15 (structure_health)    :: Struct
16 => |                  |
17 (pressure setpoints)  :: HM
18 => |                  | -> en_used_pres  ::
19 State
20 (int_pressure)        :: InteriorEnv
21 => _____
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124 lines + 6 Additions

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1  """An eclss_pressure model.
2
3  variable :: TypeOfVariable
4
5  (variable) = optional variable
6
7  _____
8  clock                :: Clock
9  => |                  | -> en_needed_pres ::
10 State
11 design                :: DomeSpec
12 => |                  |
13 (available energy)    :: Energy
14 => | EclssPressureEnv |
15 (structure_health)    :: Struct
16 => |                  |
17 (pressure setpoints)  :: HM
18 => |                  | -> en_used_pres  ::
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20 (int_pressure)        :: InteriorEnv
21 => _____
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sed to control pressure")
40     # structure_sec_1 = Variable(name="structure_se
c_1",
41     #                                     value=struct_he
lth.value[0],
42     #                                     units="",
43     #                                     description="hea
lth level of the dome section 1; 1 is the healthiest")
44     # structure_sec_2 = Variable(name="structure_se
c_2",
45     #                                     value=struct_he
lth.value[1],
46     #                                     units="",
47     #                                     description="hea
lth level of the dome section 2; 1 is the healthiest")
48     # structure_sec_3 = Variable(name="structure_se
c_3",
49     #                                     value=struct_he
lth.value[2],
50     #                                     units="",
51     #                                     description="hea
lth level of the dome section 3; 1 is the healthiest")
52     # structure_sec_4 = Variable(name="structure_se
c_4",
53     #                                     value=struct_he
lth.value[3],
54     #                                     units="",
55     #                                     description="hea
lth level of the dome section 4; 1 is the healthiest")
56     # structure_sec_5 = Variable(name="structure_se
c_5",
57     #                                     value=struct_he
lth.value[4],
58     #                                     units="",
59     #                                     description="hea
lth level of the dome section 5; 1 is the healthiest")
60     # print(struct_health)
61     @make_function(en_needed_pres,
62                     en_used_pres)
63     def f_eclss_pres(pres_capac_per_vol=dome_specs.
pres_capac_per_vol,
64                     air_leak_coefi
cent=dome_specs.air_leak_coeficent,
65                     efficiency_of_PM=dome_specs.ef
ficiency_of_PM,
66                     lower_pressure_setpo=HM_pressu
re_lower_setpoint,
67                     upper_pressure_setpo=HM_pressu
re_upper_setpoint,
68                     en_needed_pres=en_needed_pres,
69                     available_en=energy_available_
energy,
70                     struct_health=struct_health,
71                     int_env_pres=int_env_pres,

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sed to control pressure")
40     # structure_sec_1 = Variable(name="structure_se
c_1",
41     #                                     value=struct_he
lth.value[0],
42     #                                     units="",
43     #                                     description="hea
lth level of the dome section 1; 1 is the healthiest")
44     # structure_sec_2 = Variable(name="structure_se
c_2",
45     #                                     value=struct_he
lth.value[1],
46     #                                     units="",
47     #                                     description="hea
lth level of the dome section 2; 1 is the healthiest")
48     # structure_sec_3 = Variable(name="structure_se
c_3",
49     #                                     value=struct_he
lth.value[2],
50     #                                     units="",
51     #                                     description="hea
lth level of the dome section 3; 1 is the healthiest")
52     # structure_sec_4 = Variable(name="structure_se
c_4",
53     #                                     value=struct_he
lth.value[3],
54     #                                     units="",
55     #                                     description="hea
lth level of the dome section 4; 1 is the healthiest")
56     # structure_sec_5 = Variable(name="structure_se
c_5",
57     #                                     value=struct_he
lth.value[4],
58     #                                     units="",
59     #                                     description="hea
lth level of the dome section 5; 1 is the healthiest")
60     # print(struct_health)
61     @make_function(en_needed_pres,
62                     en_used_pres)
63     def f_eclss_pres(en_needed_pres=en_needed_pres,
64                     available_en=energy_available_
energy,
65                     struct_health=struct_health,
66                     int_env_pres=int_env_pres,
67                     pres_capac_per_vol=dome_specs.
pres_capac_per_vol,
68                     air_leak_coefi
cent=dome_specs.air_leak_coeficent,
69                     efficiency_of_PM=dome_specs.ef
ficiency_of_PM,
70                     lower_pressure_setpo=HM_pressu
re_lower_setpoint,
71                     upper_pressure_setpo=HM_pressu

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72         ):
73         # def f_eclss_pres(lower_pressure_setpo=HM_pres
sure_lower_setpoint,
74         #             upper_pressure_setpo=HM_pres
sure_upper_setpoint,
75         #             pres_capac_per_vol=dome_spec
s.pres_capac_per_vol,
76         #             air_leak_coeficent=dome_spec
s.air_leak_coeficent,
77         #             efficiency_of_PM=dome_specs.
efficiency_of_PM,
78         #             en_needed_pres=en_needed_pre
s,
79         #             available_en=energy_availabl
e_energy,
80         #             structure_sec_1=structure_se
c_1,
81         #             structure_sec_2=structure_se
c_2,
82         #             structure_sec_3=structure_se
c_3,
83         #             structure_sec_4=structure_se
c_4,
84         #             structure_sec_5=structure_se
c_5,
85         #             int_env_pres=int_env_pres):
86
87         """Transition function for ECLSS heat"""
88         print('eclss', en_needed_pres,
89               available_en,
90               struct_health,
91               int_env_pres,
92               lower_pressure_setpo,
93               upper_pressure_setpo,
94               pres_capac_per_vol,
95               air_leak_coeficent,
96               efficiency_of_PM)
97         raise Exception('stop_AMIR')
98         sadsasa
99         # input('sds')
100        structure_sec_1 = struct_health[0]
101        structure_sec_2 = struct_health[1]
102        structure_sec_3 = struct_health[2]
103        structure_sec_4 = struct_health[3]
104        structure_sec_5 = struct_health[4]
105        # print(structure_sec_1, structure_sec_2, s
tructure_sec_3, structure_sec_4, structure_sec_5)
106        latenet_structure_eclss = (structure_sec_1
+
107        structure_sec_2
+
108        structure_sec_3
+
109        structure_sec_4
+
110        structure_sec_5)
111        / 5
112        en_needed_pres_new = max(0.0, ((lower_press
ure_setpo +
112        upper_pre
ssure_setpo) / 2 -
113        int_env_pr

```



re_upper_setpoint

```

72         ):
73         # def f_eclss_pres(lower_pressure_setpo=HM_pres
sure_lower_setpoint,
74         #             upper_pressure_setpo=HM_pres
sure_upper_setpoint,
75         #             pres_capac_per_vol=dome_spec
s.pres_capac_per_vol,
76         #             air_leak_coeficent=dome_spec
s.air_leak_coeficent,
77         #             efficiency_of_PM=dome_specs.
efficiency_of_PM,
78         #             en_needed_pres=en_needed_pre
s,
79         #             available_en=energy_availabl
e_energy,
80         #             structure_sec_1=structure_se
c_1,
81         #             structure_sec_2=structure_se
c_2,
82         #             structure_sec_3=structure_se
c_3,
83         #             structure_sec_4=structure_se
c_4,
84         #             structure_sec_5=structure_se
c_5,
85         #             int_env_pres=int_env_pres):
86
87         """Transition function for ECLSS heat"""
88         print('eclss', en_needed_pres,
89               available_en,
90               struct_health,
91               int_env_pres,
92               lower_pressure_setpo,
93               upper_pressure_setpo,
94               pres_capac_per_vol,
95               air_leak_coeficent,
96               efficiency_of_PM)
97         raise Exception('stop_AMIR')
98         sadsasa
99         # input('sds')
100        structure_sec_1 = struct_health[0]
101        structure_sec_2 = struct_health[1]
102        structure_sec_3 = struct_health[2]
103        structure_sec_4 = struct_health[3]
104        structure_sec_5 = struct_health[4]
105        # print(structure_sec_1, structure_sec_2, s
tructure_sec_3, structure_sec_4, structure_sec_5)
106        latenet_structure_eclss = (structure_sec_1
+
107        structure_sec_2
+
108        structure_sec_3
+
109        structure_sec_4
+
110        structure_sec_5)
111        / 5
112        en_needed_pres_new = max(0.0, ((lower_press
ure_setpo +
112        upper_pre
ssure_setpo) / 2 -
113        int_env_pr

```

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```

    es) *
114         pres_capac_per_v
    ol + int_env_pres *
115         air_leak_coefice
    nt *
116         ((1 - latenet_st
    ructure_eclss) + 0) /
117         efficiency_of_P
    M)
118         en_used_pres_new = max(0.0, min(available_e
    n,
119         en_needed
    _pres))
120         return en_needed_pres_new, \
121         en_used_pres_new
122
123     return eclss_pressure
124

```

```

    es) *
114         pres_capac_per_v
    ol + int_env_pres *
115         air_leak_coefice
    nt *
116         ((1 - latenet_st
    ructure_eclss) + 0) /
117         efficiency_of_P
    M)
118         en_used_pres_new = max(0.0, min(available_e
    n,
119         en_needed
    _pres))
120         return en_needed_pres_new, \
121         en_used_pres_new
122
123     return eclss_pressure
124

```

