

## Equation assignment sequence for variable $U^e$

no	var	equ	quations	token
79	12	-	$S_N :: \text{port variable}$	
78	26	-	$A^v :: \text{port variable}$	
77	64	-	$P_{NS,KS} :: \text{port variable}$	
76	9	-	$r_{xN} :: \text{port variable}$	
75	88	-	$K^o_K :: \text{port variable}$	
74	62	-	$P_{N,NK} :: \text{port variable}$	
73	127	-	$D_{N,A} :: \text{port variable}$	
72	23	-	$r_{zN} :: \text{port variable}$	
71	10	-	$r_{yN} :: \text{port variable}$	
70	86	-	$N_{S,K} :: \text{port variable}$	
69	61	-	$P_{S,NS} :: \text{port variable}$	
68	60	-	$P_{K,NK} :: \text{port variable}$	
67	63	-	$P_{NK,KS} :: \text{port variable}$	
66	59	-	$P_{NS,AS} :: \text{port variable}$	
65	5	-	$F_{N,A} :: \text{port variable}$	
64	128	-	$D_{NS,AS} :: \text{port variable}$	
63	164	-	$1_{NS} :: \text{port variable}$	
62	13	-	$V_N :: \text{port variable}$	
61	177	-	$P_{N,NS} :: \text{port variable}$	

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no	var	equ	quations	token
60	6	-	$t :: \text{port variable}$	
59	1	-	$\# :: \text{port variable}$	
58	159	-	$C_N :: \text{port variable}$	
57	11	-	$U_N :: \text{port variable}$	
56	27	16	$Bo_N := \text{Instantiate}(S_N, \#)$	
55	69	47	$m_N := \lambda_S \overset{S \in NS}{\star} n_{NS}$	
54	29	142	$\lambda_S := \text{Instantiate}(\lambda_S, \#)$	
53	16	7	$T_N := \frac{\partial U_N}{\partial S_N}$	
52	16	113	$T_N := \text{Instantiate}(T_N, \#)$	
51	87	64	$E_{a_{NK}} := \text{Instantiate}(P_{N,NK} \overset{N}{\star} R_N . T_{NK}, \#)$	
50	28	17	$R_N := A^v . Bo_N$	
49	115	91	$c^o_{KS} := \text{Instantiate}(c_{KS}, \#)$	
48	114	90	$c_{KS} := c_{NS} \overset{NS}{\star} P_{NS,KS}$	
47	71	154	$\rho_N := \text{Instantiate}(\rho_N, \#)$	
46	71	49	$\rho_N := m_N . (V_N)^{-1}$	
45	50	134	$k^c_{xN} := \text{Instantiate}(k^c_{xN}, \#)$	
44	50	37	$k^c_{xN} := \left( \lambda_S \overset{S \in NS}{\star} (\mu_{NS})^{-1} \right) . (V_N)^{-1} . \frac{\partial U_N}{\partial p_N} . v_{xN}$	
43	15	6	$p_N := \left( -\frac{\partial U_N}{\partial V_N} \right)$	
42	15	115	$p_N := \text{Instantiate}(p_N, \#)$	
41	65	46	$d_A := \text{sign} \left( F_{N,A} \overset{N}{\star} p_N \right)$	

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no	var	equ	quations	token
40	4	3	$0.5 := \text{Instantiate}(\#, \#)$	
39	21	12	$v_{xN} := \frac{\partial r_{xN}}{\partial t}$	
38	77	55	$T_{NK} := P_{N,NK} \overset{N}{\star} T_N$	
37	89	65	$K_{NK} := K^o_K \odot \exp((-E_{aNK}) \cdot (R_N \overset{N}{\star} P_{N,NK} \cdot T_{NK})^{-1})$	
36	116	92	$\phi_{KS} := \prod (c_{KS} \cdot (c^o_{KS})^{-1})$	
35	98	74	$\hat{V}_A := (\rho_N)^{-1} \cdot k_{xN}^c \cdot A_{yzN} \cdot D_{N,A} \overset{N}{\star} p_N$	
34	109	85	$c_{AS} := (0.5 \cdot (F_{NS,AS} - d_A \odot  F_{NS,AS} )) \overset{NS}{\star} c_{NS}$	
33	95	71	$A_{yzN} := r_{yN} \cdot r_{zN}$	
32	54	137	$k_{xNS}^d := \text{Instantiate}(k_{xNS}^d, \#)$	
31	54	41	$k_{xNS}^d := (\mu_{NS})^{-1} \cdot (v_{xN} \odot ((V_N)^{-1} \odot \frac{\partial U_N}{\partial \mu_{NS}}))$	
30	45	114	$\mu_{NS} := \text{Instantiate}(\mu_{NS}, \#)$	
29	45	32	$\mu_{NS} := \frac{\partial U_N}{\partial n_{NS}}$	
28	93	69	$N_{NS,NK} := P_{S,NS} \overset{S}{\star} ((P_{K,NK} \cdot T_{NK} \cdot (T_{NK})^{-1}) \overset{K}{\star} N_{S,K})$	
27	117	93	$\xi_{NK} := K_{NK} \cdot P_{NK,KS} \overset{KS}{\star} \phi_{KS}$	
26	110	86	$\hat{n}_{AS}^c := \hat{V}_A \odot c_{AS}$	
25	73	51	$F_{NS,AS} := F_{N,A} \odot P_{NS,AS}$	
24	104	80	$\hat{n}_{AS}^d := A_{yzN} \odot (-k_{xNS}^d) \cdot D_{NS,AS} \overset{NS}{\star} \mu_{NS}$	
23	118	94	$\tilde{n}_{NS} := V_N \odot (N_{NS,NK} \overset{NK}{\star} \xi_{NK})$	
22	111	87	$\hat{n}_{NS}^c := F_{NS,AS} \overset{AS}{\star} \hat{n}_{AS}^c$	
21	105	81	$\hat{n}_{NS}^d := F_{NS,AS} \overset{AS}{\star} \hat{n}_{AS}^d$	

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no	var	equ	quations	token
20	2	1	$0 := \text{Instantiate}(\#, \#)$	
19	8	5	$t_e := \text{Instantiate}(t, \#)$	
18	7	4	$t_o := \text{Instantiate}(t, \#)$	
17	150	124	$n^o_{NS} := \text{Instantiate}(n_{NS}, \#)$	
16	119	95	$\dot{n}_{NS} := \hat{n}^e_{NS} + \hat{n}^d_{NS} + \tilde{n}_{NS}$	
15	119	129	$\dot{n}_{NS} := \text{Instantiate}(\dot{n}_{NS}, 0)$	
14	42	116	$n_{NS} := \int_{t_o}^{t_e} \dot{n}_{NS} dt + n^o_{NS}$	
13	165	161	$n^t_N := 1_{NS} \overset{S \in NS}{\star} c_{NS}$	
12	108	127	$c_{NS} := \text{Instantiate}(c_{NS}, \#)$	
11	108	84	$c_{NS} := (V_N)^{-1} \odot n_{NS}$	
10	191	194	$k^{e,\xi}_N := \text{Instantiate}(k^{e,\xi}_N, \#)$	
9	183	179	$i_{NS} := P_{N,NS} \overset{N}{\star} i_N$	
8	166	162	$\xi_{NS} := (n^t_N)^{-1} \odot c_{NS}$	
7	182	195	$k^e_N := k^{e,\xi}_N \overset{S \in NS}{\star} \xi_{NS}$	
6	182	178	$k^e_N := i_N \cdot (U^e_N)^{-1}$	
5	185	181	$k^{e,\xi}_N := (U^e_N)^{-1} \cdot \left( i_{NS} \overset{S \in NS}{\star} \ln(\xi_{NS}) \right)$	
4	173	196	$i_N := k^e_N \cdot U^e_N$	
3	173	168	$i_N := \frac{dC_N}{dt}$	
2	160	182	$U^e_N := (k^{e,\xi}_N)^{-1} \cdot i_N$	
1	160	177	$U^e_N := \text{Instantiate}(U^e_N, \#)$	

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no	var	equ	quations	token
0	160	156	$U^e_N := (C_N)^{-1} . U_N$	