Equation assignment sequence for variable *phi*

no	var	equ	quations	token
87	26	-	A^v :: port variable	
86	64	-	$P_{NS,KS}$ :: port variable	
85	9	-	r_{xN} :: port variable	
84	88	-	$K^o{}_K$ :: port variable	
83	62	-	$P_{N,NK}$ :: port variable	
82	23	-	r_{zN} :: port variable	
81	10	-	r_{yN} :: port variable	
80	86	-	$N_{S,K}$ :: port variable	
79	61	-	$P_{S,NS}$ :: port variable	
78	60	-	$P_{K,NK}$ :: port variable	
77	63	-	$P_{NK,KS}$ :: port variable	
76	59	-	$P_{NS,AS}$ :: port variable	
75	128	-	$D_{NS,AS}$ :: port variable	
74	127	-	$D_{N,A}$ :: port variable	
73	5	-	$F_{N,A}$ :: port variable	
72	12	-	S_N :: port variable	
71	1	-	# :: port variable	
70	6	-	t :: port variable	
69	13	-	V_N :: port variable	

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no	var	equ	quations	token
68	11	-	U_N :: port variable	
67	27	16	$Bo_N := \text{Instantiate}(S_N, \#)$	
66	87	64	$E_{aNK} := \text{Instantiate}(P_{N,NK} \overset{N}{\star} R_N \,.\, T_{NK}, \#)$	
65	28	17	$R_N := A^v \,.\, Bo_N$	
64	115	91	$c^o{}_{KS} := \text{Instantiate}(c_{KS}, \#)$	
63	114	90	$c_{KS} := c_{NS} \overset{NS}{\star} P_{NS,KS}$	
62	71	154	$\rho_N := \text{Instantiate}(\rho_N, \#)$	
61	71	49	$\rho_N := m_N \,.\, (V_N)^{-1}$	
60	50	134	$k^c_{xN} := \text{Instantiate}(k^c_{xN}, \#)$	
59	50	37	$k^c_{xN} := \left(\lambda_S \overset{S \in NS}{\star} (\mu_{NS})^{-1}\right) \,.\, (V_N)^{-1} \,.\, \frac{\partial U_N}{\partial p_N} \,.\, v_{xN}$	
58	65	46	$d_A := \text{sign}\left(F_{N,A} \overset{N}{\star} p_N\right)$	
57	4	3	$0.5 := \text{Instantiate}(\#, \#)$	
56	108	127	$c_{NS} := \text{Instantiate}(c_{NS}, \#)$	
55	108	84	$c_{NS} := (V_N)^{-1} \odot n_{NS}$	
54	21	12	$v_{xN} := \frac{\partial r_{xN}}{\partial t}$	
53	77	55	$T_{NK} := P_{N,NK} \overset{N}{\star} T_N$	
52	89	65	$K_{NK} := K^o{}_K \odot exp((-E_{aNK}) \,.\, \left(R_N \overset{N}{\star} P_{N,NK} \,.\, T_{NK}\right)^{-1})$	
51	116	92	$\phi_{KS} := \prod \left(c_{KS} \,.\, (c^o{}_{KS})^{-1}\right)$	
50	98	74	$\hat{V}_A := (\rho_N)^{-1} \,.\, k^c_{xN} \,.\, A_{yzN} \,.\, D_{N,A} \overset{N}{\star} p_N$	
49	109	85	$c_{AS} := (0.5 \,.\, (F_{NS,AS} - d_A \odot \lvert F_{NS,AS} \rvert)) \overset{NS}{\star} c_{NS}$	

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no	var	equ	quations	token
48	54	137	$k^d_{xNS} := \text{Instantiate}(k^d_{xNS}, \#)$	
47	54	41	$k^d_{xNS} := (\mu_{NS})^{-1} \,.\, \left(v_{xN} \odot \left((V_N)^{-1} \odot \frac{\partial U_N}{\partial \mu_{NS}}\right)\right)$	
46	45	114	$\mu_{NS} := \text{Instantiate}(\mu_{NS}, \#)$	
45	45	32	$\mu_{NS} := \frac{\partial U_N}{\partial n_{NS}}$	
44	95	71	$A_{yzN} := r_{yN} \,.\, r_{zN}$	
43	34	22	$k^q_{xN} := (V_N)^{-1} \,.\, \frac{\partial U_N}{\partial T_N} \,.\, v_{xN}$	
42	34	131	$k^q_{xN} := \text{Instantiate}(k^q_{xN}, \#)$	
41	58	45	$h_{NS} := H_N \odot (n_{NS})^{-1}$	
40	58	139	$h_{NS} := \text{Instantiate}(h_{NS}, \#)$	
39	93	69	$N_{NS,NK} := P_{S,NS} \overset{S}{\star} \left(\left(P_{K,NK} \,.\, T_{NK} \,.\, (T_{NK})^{-1}\right) \overset{K}{\star} N_{S,K}\right)$	
38	117	93	$\xi_{NK} := K_{NK} \,.\, P_{NK,KS} \overset{KS}{\star} \phi_{KS}$	
37	110	86	$\hat{n}^c{}_{AS} := \hat{V}_A \odot c_{AS}$	
36	73	51	$F_{NS,AS} := F_{N,A} \odot P_{NS,AS}$	
35	104	80	$\hat{n}^d{}_{AS} := A_{yzN} \odot \left(-k^d_{xNS}\right) \,.\, D_{NS,AS} \overset{NS}{\star} \mu_{NS}$	
34	124	100	$\hat{q}_A := A_{yzN} \,.\, k^q_{xN} \,.\, D_{N,A} \overset{N}{\star} T_N$	
33	122	98	$\hat{w}_A := \text{Instantiate}(\hat{H}^c{}_A, \#)$	
32	120	96	$\hat{H}^c{}_A := \left(F_{NS,AS} \overset{NS}{\star} h_{NS}\right) \overset{S \in AS}{\star} \hat{n}^c{}_{AS}$	
31	106	82	$\hat{H}^d{}_A := \left(F_{NS,AS} \overset{NS}{\star} h_{NS}\right) \overset{S \in AS}{\star} \hat{n}^d{}_{AS}$	
30	118	94	$\tilde{n}_{NS} := V_N \odot \left(N_{NS,NK} \overset{NK}{\star} \xi_{NK}\right)$	
29	111	87	$\hat{n}^c{}_{NS} := F_{NS,AS} \overset{AS}{\star} \hat{n}^c{}_{AS}$	

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no	var	equ	quations	token
28	105	81	$\hat{n}^d{}_{NS} := F_{NS,AS} \overset{AS}{\star} \hat{n}^d{}_{AS}$	
27	125	101	$\hat{q}_N := F_{N,A} \overset{A}{\star} \hat{q}_A$	
26	123	99	$\hat{w}_N := F_{N,A} \overset{A}{\star} \hat{w}_A$	
25	121	97	$\hat{H}^c{}_N := F_{N,A} \overset{A}{\star} \hat{H}^c{}_A$	
24	107	83	$\hat{H}^d{}_N := F_{N,A} \overset{A}{\star} \hat{H}^d{}_A$	
23	2	1	$0 := \text{Instantiate}(\#, \#)$	
22	29	142	$\lambda_S := \text{Instantiate}(\lambda_S, \#)$	
21	30	18	$C_{pN} := \frac{\partial H_N}{\partial T_N}$	
20	150	124	$n^o{}_{NS} := \text{Instantiate}(n_{NS}, \#)$	
19	119	95	$\dot{n}_{NS} := \hat{n}^c{}_{NS} + \hat{n}^d{}_{NS} + \tilde{n}_{NS}$	
18	119	129	$\dot{n}_{NS} := \text{Instantiate}(\dot{n}_{NS}, 0)$	
17	8	5	$t_e := \text{Instantiate}(t, \#)$	
16	7	4	$t_o := \text{Instantiate}(t, \#)$	
15	151	125	$H^o{}_N := \text{Instantiate}(H_N, \#)$	
14	126	102	$\dot{H}_N := \hat{H}^c{}_N + \hat{H}^d{}_N + \hat{q}_N + \hat{w}_N$	
13	126	128	$\dot{H}_N := \text{Instantiate}(\dot{H}_N, 0)$	
12	69	47	$m_N := \lambda_S \overset{S \in NS}{\star} n_{NS}$	
11	16	7	$T_N := \frac{\partial U_N}{\partial S_N}$	
10	16	113	$T_N := \text{Instantiate}(T_N, \#)$	
9	148	140	$cp_N := \text{Instantiate}(cp_N, \#)$	

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no	var	equ	quations	token
8	148	120	$cp_N := C_{pN} \,.\, (m_N)^{-1}$	
7	145	117	$T_{refN} := \text{Instantiate}(T_N, \#)$	
6	15	6	$p_N := \left(-\frac{\partial U_N}{\partial V_N}\right)$	
5	15	115	$p_N := \text{Instantiate}(p_N, \#)$	
4	42	116	$n_{NS} := \int_{t_o}^{t_e} \dot{n}_{NS} \; dt + n^o{}_{NS}$	
3	18	123	$H_N := \int_{t_o}^{t_e} \dot{H}_N \; dt + H^o{}_N$	
2	18	122	$H_N := m_N \,.\, \int_{T_{refN}}^{T_N} cp_N \; dT_N$	
1	18	9	$H_N := U_N - p_N \,.\, V_N$	
0	153	130	$phi := \text{MixedStack}\,(n_{NS}, H_N)$	