--Geochemistry
The dolostone and shale layers are assumed to be entirely composed of dolomite, and the limestone layers calcite.
The dolomite and calcite dissolution kinetics are taken from Palandri Kharaka 2004, assuming pH-dependence.
The specific surface areas are taken from Bacon Murphy 2011.
Only H+, CO2, Ca2+, and Mg2+ are modeled. No charge balance is necessary.

--Stratigraphy
Below is the lumping applied to get to 47 layers

Lithology	Formation		Zone	STOMP Layer
Silty and sandy dolomite; shale	Davis	Davis	40	not modeled
	Potosi	Po15	39	1
	Potosi	Po15	39	2
	Potosi	Po15	39	3
	Potosi	Po14	38	4
	Potosi	Po13	37	5
	Potosi	Po13	37	6
	Potosi	Po13	37	7
	Potosi	Po13	37	8
	Potosi	Po12	36	9
	Potosi	Po11	35	10
	Potosi	Po11	35	11
	Potosi	Po10	34	12
	Potosi	Po9	33	13
	Potosi	Po9	33	14
	Potosi	Po9	33	15
	Potosi	Po9	33	16
	Potosi	Po9	33	17
	Potosi	Po8	32	18

			Potosi	Po7
31	19			
			Potosi	Po7
31	20			
			Potosi	Po7
31	21			
			Potosi	Po6
30	22			
			Potosi	Po6
30	23			
			Potosi	Po6
30	24			
			Potosi	Po5
29	25			
			Potosi	Po4
28	26			
			Potosi	Po4
28	27			
			Potosi	Po3
27	28			
			Potosi	Po3
27	29			
			Potosi	Po3
27	30			
			Potosi	Po3
27	31			
			Potosi	Po3
27	32			
			Potosi	Po2
26	33			
			Potosi	Po2
26	34			
Dolomite			Potosi	Potosi_Po1
25	35			
			Oneota	On7
22	36			
			Oneota	On6
21	37			
			Oneota	On4
19	38			
Dolomite, Argilaceous Dolomite, and Shale			Oneota	Oneota_On1
16	39			
			Shakopee	Sh7
13	40			
			Shakopee	Sh5
11	41			
Dolomite, Argilaceous Dolomite, and Shale			Shakopee	Shakopee_Sh1
7	42			
Shale and Sandstone			St. Peter	Thickness
(Shakopee - St. Peter)		5	43	
Shale, Argillaceous Limestone, and Limestone			Dutchtown	Thickness
(St. Peter - Dutchtown)		4	44	
Limestone			Platteville	Thickness
(Dutchtown - Platteville)		3	45	

Limestone (Platteville - Trenton)	2	46	Trenton	Thickness
Shale, Argillaceous Limestone, and Limestone (Trenton - Maquoketa Shale)	1	47	Mequoketa	Thickness