But $|c|>2$

so if $2\left(1-\left(\frac{2}{|c|^3}\right)^{1/4}\right) > \frac{1}{4\sqrt[3]{4}}$ (1)

is true then it will be true for $c>2$.

$$(1) \Rightarrow \left(1-\left(\frac{2}{|c|^3}\right)^{1/4}\right) > \frac{1}{8\sqrt[3]{4}}$$

$$1-\frac{1}{8\sqrt[3]{4}} > \left(\frac{2}{|c|^3}\right)^{1/4}$$

$$\frac{2}{|c|^3} < \left(1-\frac{1}{8\cdot\sqrt[3]{4}}\right)^4$$

$$\Rightarrow |c|^3 > 2\Big/\left(1-\frac{1}{8\cdot\sqrt[3]{4}}\right)^4$$

$$\Rightarrow |c| > \left(2\Big/\left(1-\frac{1}{8\sqrt[3]{4}}\right)^4\right)^{1/3}$$

$$>1.40$$

So what is true for $|c|>2$

I can't see the point of all this fuss, it's sufficient that since $|c|>2$, the upper bound is less than 1 in eq. (A)

Hence S_i are contractions (again)

By using a complex version of the mean value theorem

$$\frac{1}{4(|c|+|2c|^{1/4})^{3/4}} \leq \left|\frac{S_i(z_1)-S(z_2)}{z_1-z_2}\right| \leq \frac{1}{4(|c|-|2c|^{1/4})^{3/4}}$$

for each i

Follows from propositions 9.6 & 9.7 of

Follows Solns for lower and upper bounds for $\dim_H(F) = s$, where F is the invariant set for the S_i, are solutions to *

$$4\left(\frac{1}{4(|c|\pm|2c|^{1/4})^{3/4}}\right)^s = 1$$

ie $$\log 4 + s\log\left(\frac{1}{4(|c|\pm|2c|^{1/4})^{3/4}}\right) = 0$$

$$s = -\log 4\Big/\log\left(\frac{1}{4(|c|\pm|2c|^{1/4})^{3/4}}\right)$$