On the *DSF* and the *Dreaded Surface Effect*

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A couple of years ago, when I was first doing some simple peridynamics calculations, I naively ran into a problem. I had a simple calculation, for which I was expecting a particular solution, yet I just couldn't manage to get the right answer. I searched high and low for a bug but just couldn't find a problem with my coding. So I went down the hall to ask Stewart if he had any ideas. His response was: "Oh, you have encountered the 'dreaded surface effect."' Of course, I was the last person on the planet to be in the know. At the time, I was working on developing ordinary constitutive models and so I decided to explore further. In the process, I developed a scale factor which I somewhat phonetically labeled as the 'DSF.' In this talk, I plan to demonstrate (on simple problems) what we have all come to recognize as the 'dreaded surface effect.' Then I will demonstrate the utility of using the 'DSF' to ameliorate the 'dreaded surface effect.' Subsequently, I will go through my approach for calculating the 'DSF' in a practical setting.

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