Consistent with my expertize, I have looked at the design of the MC experiment. I have some suggestions, which the authors may want to implement or recognize.

First, usually a 'raw' MC experiment with no selection will involve some non-physical outcomes, especially when the parameters fall in the corners of the parameter space. With simple models, this might show up as nonsensical model values. If the authors are able to identify these, then it would be best to delete them from the ensemble, and not to include them in either the numerator or the denominator of (6).

Second, the interpretation of the MC experiment is 'integrating out' uncertainty in the parameters. Formally, with theta = (c, phi),

```
Pr(F_s < 1) = int_theta Pr(F_s < 1, pars = theta) dtheta
            = int_theta Pr(F_s < 1 | pars = theta) Pr(pars = theta) dtheta
```

where the model gives the first term in the integrand (either a 0 or a 1 in practice) and their choice for the distribution of the parameters gives the second. So when they assign a distribution to the sampling of (c, phi), the authors are in fact describing Pr(c, phi), their 'prior beliefs' about (c, phi). In this context, uniform between c_origin/2 and 2*c_origin is slightly unusual, because the two limits suggest that uncertainty is multiplicative. Better might be U uniform in [-1, 1] and then c = 2^U * c_origin.

Finally, there are only two uncertain parameters here, which means that MC integration is not required. It would be more accurate to use quadrature to integrate over (c, phi).

It is important that the authors and their readers understand that they are computing their probability by marginalizing over the uncertain parameters in a probabilistic model, and that the MC experiment is just a technique to estimate the integration (based, of course, on the weak law of large numbers). Better techniques are available in 2 dimenions.

Jonathan Rougier
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