1146-60-178 **Michael Damron*** (mdamron6@gatech.edu), School of Mathematics, Georgia Institute of Technology, 686 Cherry St., Atlanta, GA 30332, **Bounghun Bock** (bbock3@gatech.edu), School of Mathematics, Georgia Institute of Technology, 686 Cherry St., Atlanta, GA 30332, **Charles M Newman** (newman@cims.nyu.edu), Courant Institute of Mathematical Sciences, 251 Mercer St., New York, NY 10012, and **Vladas Sidoravicius** (vs1138@nyu.edu), NYU-ECNU Institute of Mathematical Sciences, 3663 Zhongshan Road North, Shanghai, 200062, Peoples Rep of China.
Percolation of finite clusters and infinite shielded paths.

In independent bond percolation on $\mathbb{Z}^d$ with parameter p, if one removes the vertices of the infinite cluster (and incident edges), for which values of p does the remaining graph contain an infinite cluster? Grimmett-Holroyd-Kozma used the triangle condition to show that for $d \geq 19$, the set of such p contains values strictly larger than the percolation threshold p_c. With the work of Fitzner-van der Hofstad, this has been reduced to $d \geq 11$. We reprove this result by showing that for $d \geq 11$ and some $p > p_c$, there are infinite paths consisting of "shielded" vertices — vertices all whose adjacent edges are closed — which must be in the complement of the infinite cluster. Using numerical values of p_c, this bound can be reduced to $d \geq 8$. Our methods are elementary and do not require the triangle condition. (Received January 21, 2019)