Displacement and annihilation of Dirac gap-nodes in $d$-wave iron-based superconductors ANDREY CHUBUKOV, University of Minnesota, OSEKAR VAFEK, Florida State University, RAFAEL FERNANDES, University of Minnesota — It is a common belief that a $d$—wave gap in the Fe-based superconductors must have nodes on the Fermi surfaces centered at the Γ point of the Brillouin zone. Here we show that, while this is the case for a single Fermi surface made out of a single orbital, the situation is more complex if there is an even number of Fermi surfaces made out of different orbitals. In particular, we show that for the two Γ-centered hole Fermi surfaces made out of $d_{xz}$ and $d_{yz}$ orbitals, the nodal points still exist near $T_c$ along the symmetry-imposed directions, but are displaced to momenta between the two Fermi surfaces. If the two hole pockets are close enough, pairs of nodal points can merge and annihilate at some $T < T_c$, making the $d$—wave state completely nodeless. These results imply that photoemission evidence for a nodeless gap on the $d_{xz}/d_{yz}$ Fermi surfaces of KFe$_2$As$_2$ does not rule out $d$—wave gap symmetry in this material, while a nodeless gap observed on the $d_{xy}$ pocket in K$_x$Fe$_{2-y}$Se$_2$ is truly inconsistent with the $d$—wave gap symmetry.