Pseudoconvex domains have connected boundary

Abstract: Pseudoconvex domains are well known in complex analysis as the domains of existence for holomorphic functions. They can be characterized by their intrinsic geometry, in particular by the existence of a Morse exhaustion function that is plurisubharmonic. We show that the boundary of a bounded pseudoconvex domain is always connected (except for complex dimension 1) as a direct consequence of its intrinsic geometry. The proof extends to bounded J-pseudoconvex domains in almost complex manifolds too.