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60607-7045. *Polish groups acting on trees.*

We consider actions of completely metrisable groups on simplicial trees in the context of the Bass–Serre theory. Our main result characterises continuity of the amplitude function corresponding to a given action. Under fairly mild conditions on a completely metrisable group  $G$ , namely, that the set of elements generating a non-discrete or finite subgroup is somewhere dense, we show that in any decomposition as a free product with amalgamation,  $G = A *_C B$ , the amalgamated groups  $A$ ,  $B$  and  $C$  are open in  $G$ . (Received August 14, 2010)