In this paper, a technique for designing fixed parameter decentralized power system stabilizers (PSSs) for interconnected power systems is proposed. In the proposed method, local information available at each machine in the multimachine environment, is used to tune parameters of PSS. Conventional design techniques such as P-Vr frequency response approaches, and the method of residues are based on complete system information, wherein phase angles of residues are consistent with the P-Vr phase response and can be used with confidence for design purposes. It is shown that magnitude and phase information of the proposed GEP TF agrees closely with that of P-Vr TF and yields a robust stabilizer. Nonlinear simulation and eigenvalue analysis show the efficacy of the proposed stabilizer to damp out the interarea and local modes of oscillations effectively over a wide range of operating conditions. Superiority of the proposed approach over the conventional approaches is demonstrated with simulation studies on two widely used multimachine systems.