1125-92-2443 **Adam Mahdi*** (adam.mahdi@eng.ox.ac.uk), Institute of Biomedical Engineering, University of Oxford, Oxford, OX37DQ, United Kingdom. *A mathematical model for generating synthetic blood pressure.*

A new model capable of simulating many important aspects of human arterial blood pressure is proposed. An effort has been made to reflect realistic morphology of the real ABP signal. Major static and dynamic features of the model can be prescribed by the user, including heart rate, mean systolic and diastolic pressure, and the corresponding physiological control quantities such as baroreflex sensitivity coefficient and Windkessel time constant. It is shown how the model can be used to compile a virtual database of ABP signals reflecting individuals with different clinical conditions and signals containing common artefacts. This, in turn, can be used as a platform for testing a wide range of biomedical signal processing approaches. Other applications of the model, including its use in conjunction with Kalman filters, are also discussed. (Received September 20, 2016)