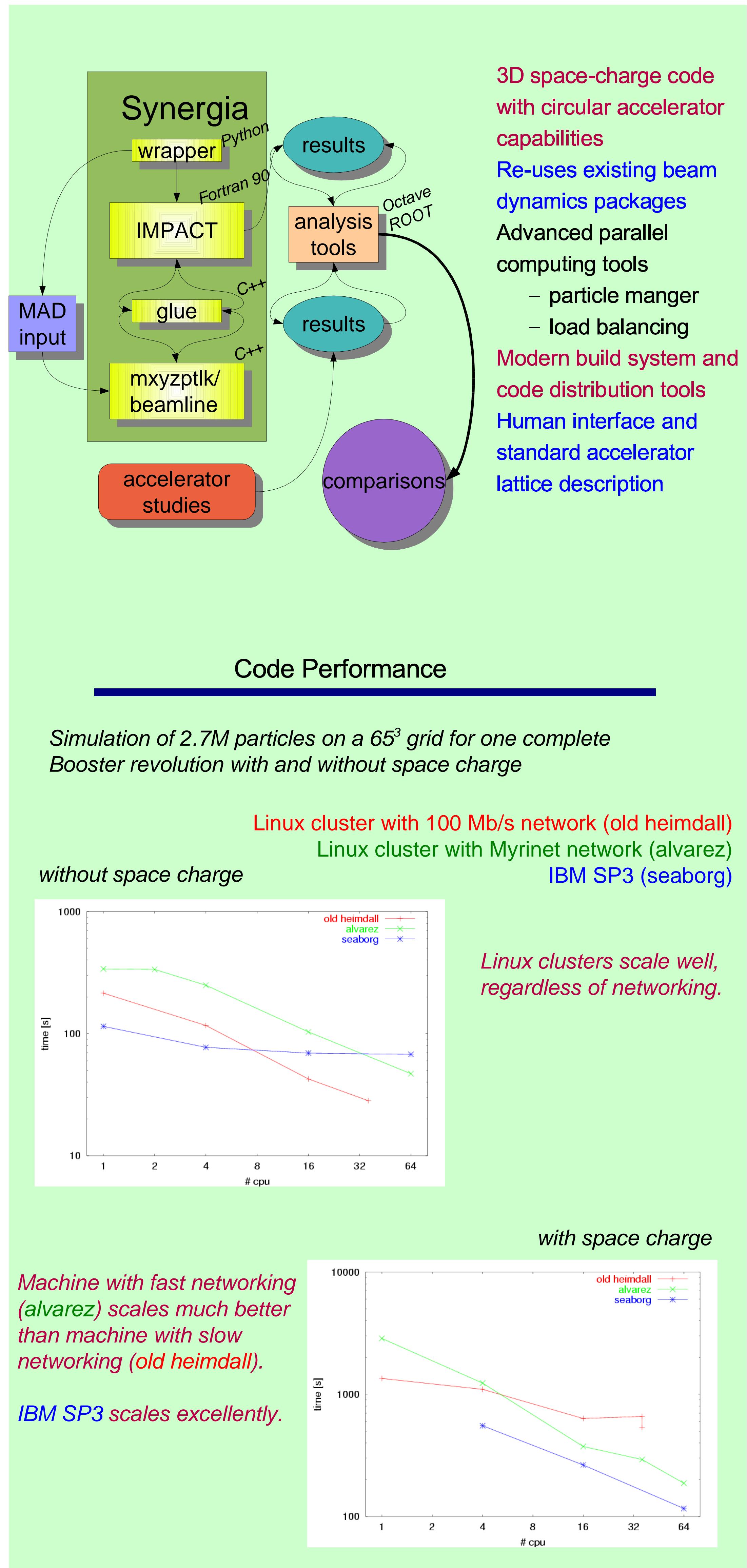


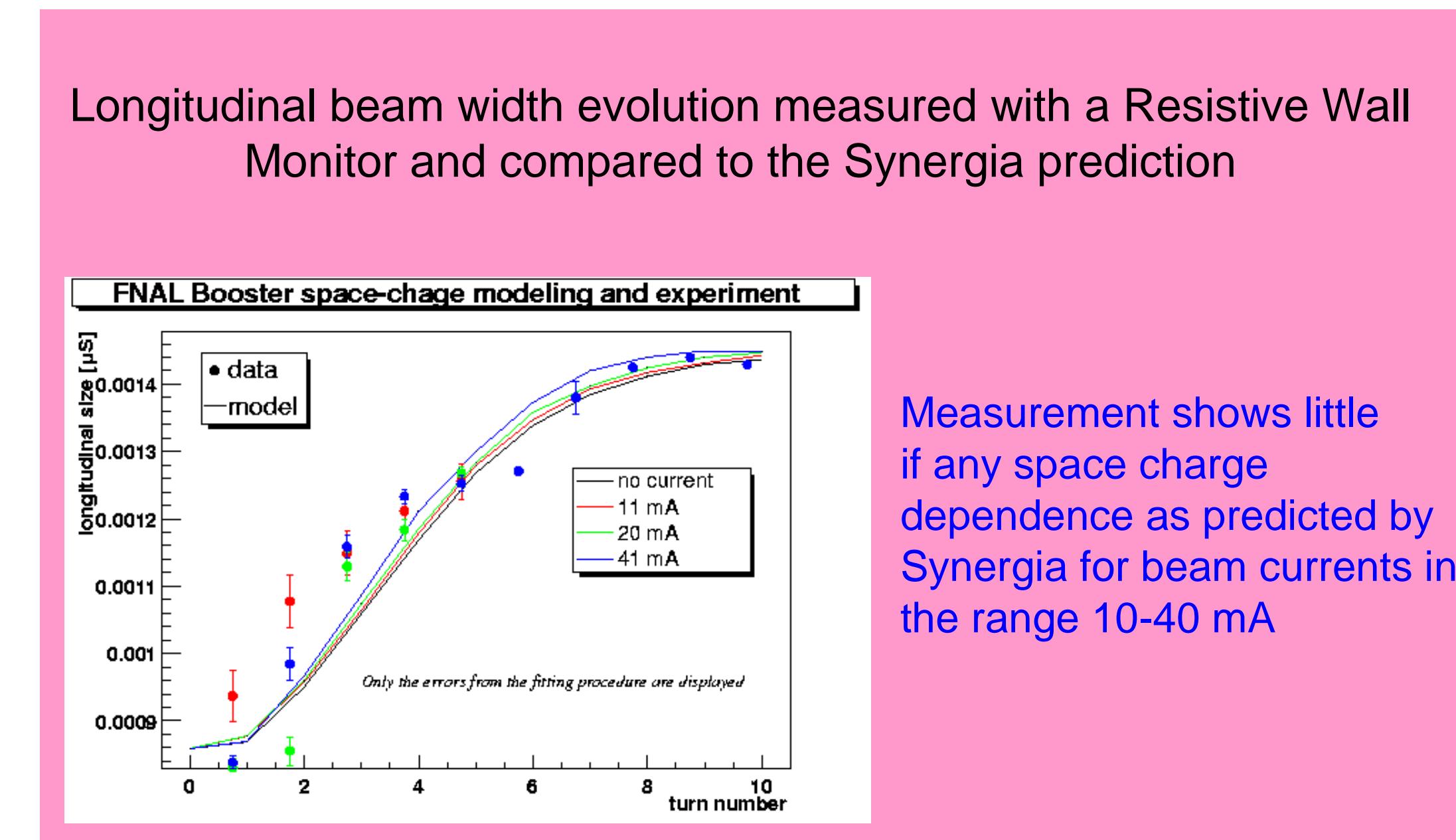
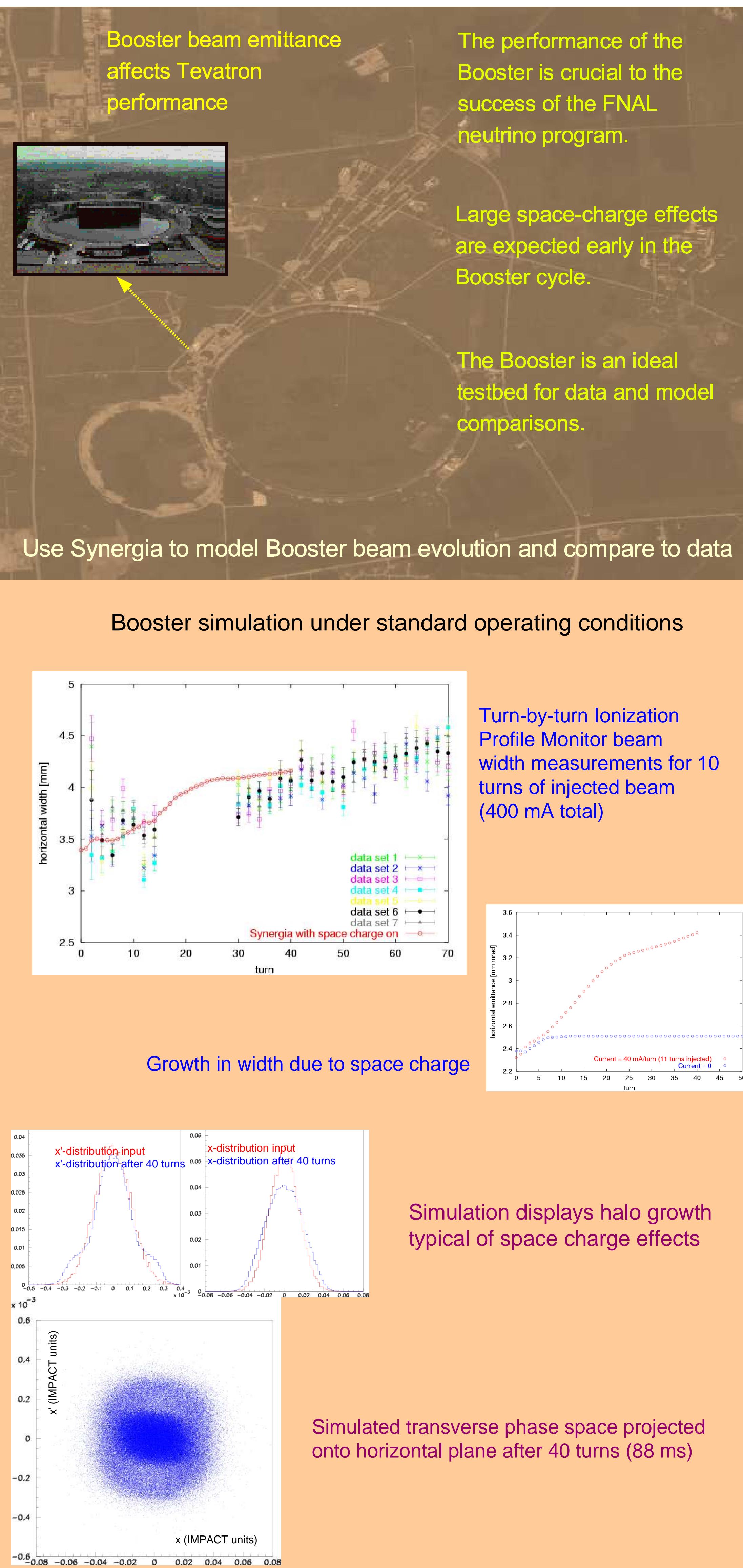
# Advanced Computing for 21<sup>st</sup> Century Accelerator Science and Technology

J. Amundson, P. Spentzouris, K. Ko, R. Ryne, C. Ng, Z. Li, V. Ivanov, J. Tran, M. Wolf, N. Folwell, A. Guetz, J. Qiang, E. Esarey, S. Habib, T. Mottershead, K. Campbell, J., R. Samulyak, W. Mori, V. Decyk, C. Huang, T. Katsouleas, S. Deng, A. Dragt, D. Bruhwiler, W. Mi, I. Malik, Y. Muliadi, E. Ng (TOPS), C. Yang, P. Husbands, G. Golub, Y. Sun, K. Ma, G. Schussman, C. Rasmussen (CCTTSS), P. Knupp (TSTT)

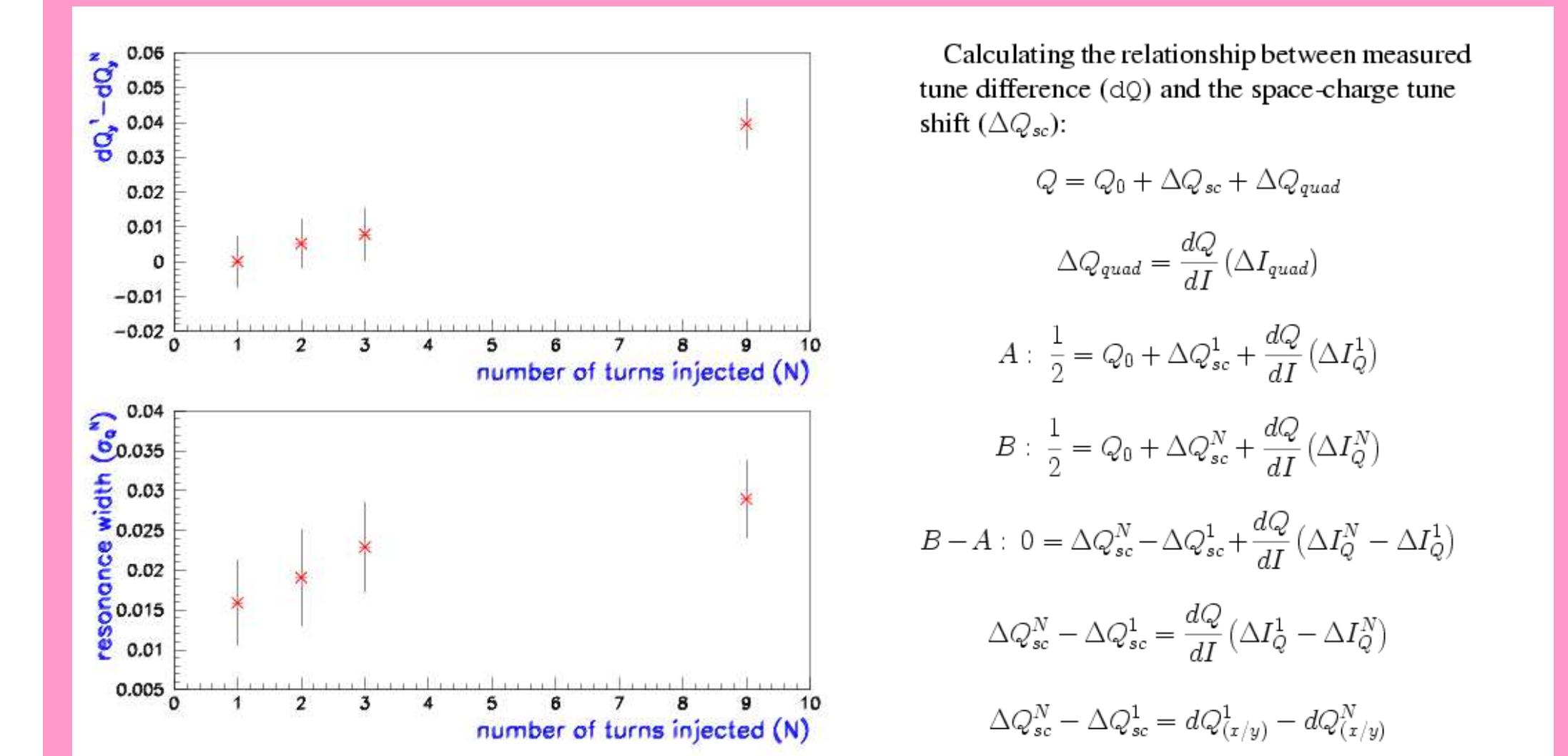
## Synergia



## FNAL Booster Modeling and Studies



Studies of tune shift versus injected charge using resonance scans



Individual resonance scans

