Fig. 5 How a generalized additive model (GAM) can be fitted to a CVP waveform. **a** Each sample from a 125 Hz CVP waveform is represented with three predictor variables: position in cardiac cycle, position in respiratory cycle and time (seconds since sample start). A GAM is fitted giving the smooth functions **b** to **e** (the model con-stant (α) is added to the smooth function in **d**. **f** Model fit including residuals that are markedly reduced compared to the model without an interaction term, visualised in Fig. 4. Grey shades in panel b, c and e represent 95% confidence intervals (often too narrow to be visible)