

Recovery of dark Dronpa-Bcd might also be influenced by a second type of flux, namely the slow redistribution of Bcd from the core of the embryo toward the cortex (Fig. 6 in Gregor et al. (3)). To estimate its magnitude, we measured the cross-sectional distribution of Dronpa-Bcd in fixed embryos. At cycle 12, we find that Bcd in the surface volume we measure represents ~47% of the total signal in the cross section; 30 min later, in early cycle 14, levels in the surface layer had increased to 54% of the total signal (Fig. 4 *d*). A similar estimate for general cytoplasmic flux between cycles 12 and 14 was obtained using live imaging to follow the redistribution of the Histone-RFP. Correcting for this flux has a minor effect on the degradation rate as a function of developmental time (Fig. 4 *e*, *red line*) but yields a degradation rate before cycle 14 of  $0.020 \pm .006 \text{ min}^{-1}$ , and a lifetime estimate of 50 min, identical to that measured at the beginning of cycle 14. We conclude that from cycle 11 to the beginning of cycle 14, the degradation rate of Bcd protein is approximately constant.