A DIFFERENT KIND OF REPETITIVE CONTROL

RC to Eliminate Periodic Measurement Disturbances

Two Experimental Applications

1. Lateral positioning of moving belt (Xerox)

2. Computer Disk Drives (Seagate)

References 27, 83
BELT STEERING SERVOMECHANISM

Reference 83
BELT STEERING SERVOMECHANISM DIAGRAM

Reference 83
PLUG-IN REPETITIVE CONTROLLER FOR BELT STEERING

Reference 83
BELT POSITION ERROR VS. TIME

First 30 sec – Feedback control only
Dashed line – Backward moving average filter

Reference 62
AFTER CONVERGENCE (900-930 seconds)

Solid line – Measured Error
Dashed line – Backward moving average error

Reference 83
RMS BACKWARD MOVING AVERAGE ERROR FOR EACH PERIOD

(Feedback only for first 5 repetitions)