Loop order and type defined as in the linear case (Unity feedback - Phase Comparator and/or VCO may not be linear)	Best in	Used for	Linear phase- comparator (and maybe VCO)	Bang-Bang phase detector (and maybe VCO)
$ \begin{array}{c} \textbf{1^{st} order} \ (\ type \ 1 \) \ slave \ loop \\ \hline \\ \textbf{Incoming signal} \\ \textbf{x(t)} \\ \hline \\ \textbf{Local clock} \\ \textbf{y(t)} \\ \hline \\ \textbf{Clock for Data Recovery y(t)} \\ \hline \end{array} $	Acquisition	Burst-mode transmission (often a phase- aligner)	OK	OK
	Tracking	Continuous mode transmission	Regenerators	-
$ \begin{array}{c c} \textbf{2}^{nd} \ order \ and \ type \ 2 \ slave \ loop \\ \hline \\ \textbf{Error signal} \\ \textbf{s(t)} = \textbf{x(t)} - \textbf{y(t)} \\ \hline \\ \textbf{Incoming signal} \\ \textbf{x(t)} \\ \hline \\ \textbf{Local clock} \\ \textbf{y(t)} \\ \hline \\ \textbf{Clock for Data Recovery y(t)} \\ \hline \\ $			-	All slaves