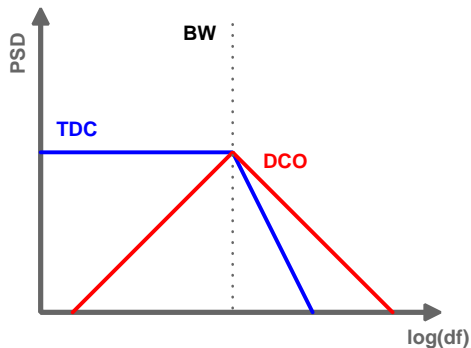


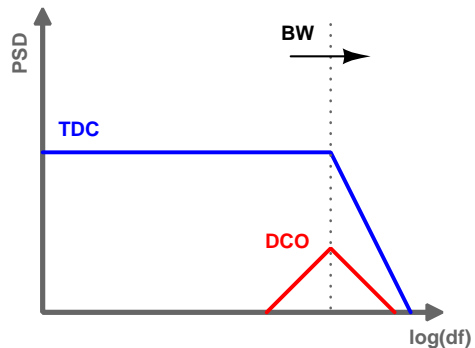
Decreasing bandwidth

- Increasing phase noise, DCO-dominated
- Slow/increasing lock time



Optimal bandwidth

- Minimum phase noise
- Equal contributions
- Moderate lock time



Increasing bandwidth

- Increasing phase noise TDC-dominated
- Fast/decreasing lock time