Optical OOK-CDMA chip-level receivers.

2) Bit Error Rate Performance Comparison.
2.A. Poisson shot-noise-limited photodetectors case.

- The chip-level receiver does not require the optical correlator.
- No waste of received optical power.
- The information about the signature code is provided in the electronic switching.
- Electronic sampling rate $\text{Electronic sampling rate} = \frac{w}{L_{\text{optical processing rate}}}$.
- The chip-level receiver does not involve optical hardlimiters.
- Only one threshold is required for the decision mechanism.
- For a shot-noise-limited system, this threshold is even independent of the system parameters.

- Optimum thresholds for the double-hardlimiters correlation receiver.
- Ideal sharp characteristics for the hardlimiters.
- A sub-optimum and constant threshold for the chip-level receiver.
- The bit error rate of the hardlimiters correlation receiver is slightly better than that of the chip-level receiver.
- They coincide with each other by increasing the average optical power and reach an error probability floor.