

## 8 Referências Bibliográficas

- [1] F. P. Kapron, D. B. Keck and R. D. Maurer, “Radiation Losses in Glass Optical Waveguides”, *Applied Physics Letters*, vol.: 17, 1970, p. 423.
- [2] I. Hayashi, M. B. Panish, P. W. Foy and S. Sumski, “*Junction Lasers Which Operate Continuously at Room Temperature*”, *Applied Physics Letters*, vol.: 17, 1970, p. 109.
- [3] S. B. Poole, D. N. Payne, R. J. Mears, M. E. Fermann and R. I. Laming, “*Fabrication and Characterization of Low-Loss Optical Fibers Containing Rare-Earth Ions*”, *IEEE Journal of Lightwave Technology*, vol.: 4, 1986, p. 870.
- [4] S. C. Rashleigh and R. Ulrich, “*Polarization-Mode Dispersion in Single-Mode Fibers*”, *Optics Letters*, vol.: 3, 1978, p. 60.
- [5] C. J. Nielsen, “Influence of Polarization Mode Coupling on the Transmission Bandwidth in Dispersive Fibers”, *Journal of Optical Society of America*, vol.: 72, 1982, p. 1142.
- [6] C. D. Poole, R. W. Tkach, A. R. Chraplyvy and D. A. Fishman, “*Fading in Lightwave Systems Due to Polarization-Mode Dispersion*”, *IEEE Photonics Technology Letters*, vol.: 3, nº 1, January 1991, p. 68.
- [7] C. D. Poole, J. H. Winters e J. A. Nagel, “*Dynamical Equation for Polarization Dispersion*”, *Optics Letters*, vol.: 16, nº 6, March 1991, p. 372.
- [8] N. Gisin, J. P. von der Weid and J. P. Pellaux, “*Polarization-Mode Dispersion of Short and Long Single-Mode Fibers*”, *Journal of Lightwave Technology*, vol.: 9, nº 7, July 1991, p. 821.
- [9] Philippe Ciprut, B. Gisin, Nicolas Gisin, Rogério Passy, J. P. von der Weid, F. Prieto and Christian W. Zimmer, “*Second-Order Polarization Mode Dispersion: Impact on Analog and Digital Transmissions*”, *Journal of Lightwave Technology*, vol.: 16, nº 5, May 1998, p. 757.
- [10] B. Gisin, N. Gisin, R. Passy and J. P. von der Weid, “*How Accurately Can One Measure a Statistical Quantity Like Polarization Mode Dispersion*”, *IEEE Photonics Technology Letters* vol.: 8, 1996, p. 1671.
- [11] Serge Huard, “*Polarisation de la Lumière*”, Masson, Paris, 1993.

- [12] C. De Angelis, A. Galtarossa, G. Gianello, F. Matera and M. Schiano, “*Time Evolution of Polarization Mode Dispersion in Long Terrestrial Links*”, *Journal of Lightwave Technology*, vol. 10, n° 5, May 1992, p. 552.
- [13] C. D. Poole, N. S. Bergamo, R. E. Wagner and H. J. Schulte, “*Polarization Dispersion and Principal States in a 147 km undersea Lightwave Cable*”, *Journal of Lightwave Technology*, vol. 6, n° 7, July 1988, p. 1185.
- [14] M. P. Varnham, D. N. Payne, R. D. Birch e E. J. Tarbox, “*Single-Polarization Operation of Highly Birefringent Bow-tie Optical Fibres*”, *Electronics Letters*, vol.: 19, n° 7, July 1983, p. 246.
- [15] M. J. Marrone, “*Polarization Holding in Long-Length Polarizing Fibres*”, *Electronics Letters*, vol.: 21, n° 6, June 1985, p. 221.
- [16] M. Karlsoon, J. Brentel and P. A. Andrekson, “*Long-Term Measurement of PMD and Polarization Drift in Installed Fibers*”, *Journal of Lightwave Technology*, vol. 18, n°: 7, July 2000, p. 941-951.
- [17] N. Gisin, R. Passy, and J. P. von der Weid, “*Definitions and Measurements of Polarization Mode Dispersion: Interferometric Versus Fixed Analyzer Methods*”, *IEEE Photonics Technology Letters*, vol.: 6, n° 6, June 1994, p. 730.
- [18] C. D. Poole and D. L. Favin, “*Polarization-Mode Dispersion Measurements Based on Transmission Spectra Through a Polarizer*”, *Journal of Lightwave Technology*, vol.: 12, n° 6, June 1994, p. 917.
- [19] P. A. Wilians, A. J. Barlow, C. Mackechnie and J. B. Schlager, “*Narrowband Measurements of Polarization-Mode Dispersion using the Modulation Phase Shift Technique*”, *Technical Digest of NIST Symposium on Optical Fiber Measurements*, 1998, p. 23.
- [20] B. L. Heffner, “*Accurate, Automated Measurement of Differential Group Delay Dispersion and Principal State Variation Using Jones Matrix Eigenanalysis*”, *IEEE Photonics Technology Letters*, vol.: 13, n° 12, December 2001, p. 814.
- [21] R. Noé, D. Sandel, M. Yoshida-Dierolf, S. Hinz, V. Mirvoda, A. Schöpflin, C. Glingener, E. Gottwald, C. Sheerer, G. Fischer, T. Weyrauch and W. Haase, “*Polarization Mode Dispersion Compensation at 10, 20 and 40 Gb/s with various Optical Equalizers*”, *IEEE Journal of Lightwave Technology*, vol.: 17, n° 9, September 1999, p. 1602.
- [22] F. Heismann, D. A. Fishman, D. L. Wilson, “*Automatic Compensation of First-Order Polarization Mode Dispersion in a 10 Gb/s Transmission System*”, *Proc. ECOC’98*, September 1998, Madrid, Spain, p. 529.
- [23] R. Kashyap, “*Fiber Bragg Gratings*”, Chapter 7, Academic Press, (1999), 311-347.

- [24] S. Särkimukka, A. D. Djupsjöbacka, A. Gavler and G. Jacobsen; “*Mitigation of Polarization-Mode Dispersion in Optical Multi-Channel Systems*” IEEE Journal of Lightwave Technology, vol.:18, n° 10, October 2000, p. 1374.
- [25] S. Bonino, M. Norgia, E. Riccardi and M. Schiano, “*Measurement of Polarisation Properties of Chirped Fiber Gratings*”, proceedings of OFMC’97, Teddington, (1997), 10-13.
- [26] K. O. Hill and G. Meltz, “*Fiber Bragg Grating Technology Fundamentals and Overview*”, J. of Lightwave Technol., vol. 15, no. 8, (1997), 1263-1276.
- [27] M. Schiano and G. Zaffiro, “*Polarisation Mode Dispersion in Chirped Fiber Gratings*”, proceedings of ECOC’98, Madrid, (1998), 403-404.
- [28] E. Ciaramella, E. Riccardi and M. Schiano, “*System Penalties due to Polarization Mode Dispersion of Chirped Gratings*”, proceedings of ECOC’98, Madrid, (1998), 515-516.
- [29] D. Ives, “*Polarisation Mode Dispersion in Chirped Fiber Bragg Gratings*”, proceedings of Symposium on Optical Fiber Measurements, Boulder, Co., (1998), 15-18.
- [30] T. Niemi, M. Uusimaa and H. Ludvigsen; “*Limitations of Phase Shift Method in Measuring Dense Group Delay Ripple of Fiber Bragg Gratings*”, IEEE Photonics Technology Letters Vol 13, No. 12, (2001), 1334-1336.
- [31] F. Heismann and M. S. Whalen, “*Fast Automatic Polarization Control System*”, IEEE Photonics Technology Letters, vol.: 4, n° 5, May 1992, p. 503.
- [32] L. J. Rysdale, “*Method of Overcoming Finite-Range Limitation of Certain State of Polarization Control Devices in Automatic Polarization Control Schemes*”, Electronics Letters, vol.: 22, n° 2, January 1986, p. 100.
- [33] R. Noé, H. Heidrich and D. Hoffmann, “*Endless Polarization Control Systems for Coherent Optics*”, Journal of Lightwave Technology, vol.: 6, n° 7, July 1988, p. 1199.
- [34] T. Pikaar, K. Van Bochove, A. Van Rooyen, H. Frankena and F. Groen, “*Nondeterministic Endless Control System for Active Polarization Control*”, Journal of Lightwave Technology, vol.: 7 n° 12, December 1989, p. 1982.
- [35] N. G. Walker and G. R. Walker, “*Polarization Control for Coherent Communications*”, Journal of Lightwave Technology, vol.: 8 n° 3, March 1990, p. 438.
- [36] F. Heismann, “*Analysis of a Reset-Free Polarization Controller for Fast Automatic Polarization Stabilization in Fiber-optic Transmission Systems*”, Journal of Lightwave Technology, vol.: 12, n° 4, April 1994, p. 690.

- [37] F. Heismann and M. S. Whalen, “*Broadband Reset-Free Automatic Polarization Controller*”, *Electronics Letters*, vol.: 27, n° 4, February 1991, p. 377.
- [38] Y. Namihira, T. Kawazawa and H. Wakabayashi, “*Field Demonstration of Endless Polarization Control in 195-km Installed Optical Fiber Submarine Cable at a Sea Depth of 2900m*”, *IEEE Photonics Technology Letters*, vol.: 3, n° 4, April 1991, p. 384.
- [39] J. Prat, J. Comellas and G. Junyent, “*Experimental Demonstration of an All-Fiber Endless Polarization Controller Based on Faraday Rotation*”, *IEEE Photonics Technology Letters*, vol.: 7, n° 12, December 1995, p. 1430.
- [40] J. P. von der Weid, L. C. B. Linares and G. V. de Faria “*A Method And Apparatus For First-Order Polarization Mode Dispersion Compensation*”, submetida ao United States Patent Institute – Patent application PI14893 (2002).
- [41] C. H. Prola Jr., J. A. Pereira da Silva, A. O. Dal Forno, R. Passy, J. P. von der Weid, and N. Gisin, “*PMD Emulators and Signal Distortion in 2.48-Gb/s IM-DD Lighwave Systems*”, *IEEE Photonics Technology Letters*, vol. 9, n°: 6, June 1997, p. 842.
- [42] A. O. Dal Forno, A. Paradisi, R. Passy, J. P. von der Weid, “*Experimental and Theoretical Modeling of Polarization-Mode Dispersion in Single-Mode Fibers*”, *IEEE Photonics Technology Letters*, vol. 12, n°: 3, March 2000, p. 296.
- [43] M. Wegmuller, S. Demma, C. Vinegoni and N. Gisin, “*Emulator of First- and Second-Order Polarization- Mode Dispersion*”, *IEEE Photonics Technology Letters*, vol. 14, n°: 5, May 2002, p. 630.
- [44] N. Gisin, R. Passy, J. C. Bischoff and B. Perny, “*Experimental Investigations of the Statistical Properties of Polarization Mode Dispersion in Single-Mode Fibers*”, *Journal of Lightwave Technology*, vol. 5, n°: 7, July 1993, p. 819.
- [45] N. Gisin and J. P. Pelloux, “*Polarization Mode Dispersion: Time versus Frequency Domains*”, *Optical Communication*, vol. 89, 1992, p. 316.
- [46] R. Noé, D. Sandel, M. Yoshida-Dierolf, S. Hinz, C. Glingener, C. Scheerer, A. Schöpflin and G. Fischer, “*Polarization Mode Dispersion Compensation at 20 Gb/s with Fibre-Based Distributed Equalizer*”, *Electronics Letters*, vol.: 34, n° 25, December 1998, p. 2421.
- [47] S. Lee, R. Khosravani, J. Peng, V. Grubsky, D. S. Staroudubov, A. E. Willner and J. Feinberg, “*Adjustable Compensation of Polarization Mode Dispersion Using a High-Birefringence Nonlinearly Chirped Fiber Bragg Grating*”, *IEEE Photonics Technology Letters*, vol.: 11, n° 10, October 1999, p. 1277.

- [48] H. Rosenfeldt, Ch. Knothe, E. Brinkmeyer, “*Component for Optical PMD-Compensation in a WDM Environment*”, Proc. ECOC 2000, September 2000, Munich, Germany, vol.: 1, p. 135.
- [49] X. Zhang, Y. Xia, Y. Huang, X. Ren, “*A Novel Tunable PMD Compensation Using Linearly Chirped Fiber Bragg Grating*”, Optics Communications, n° 214, 2002, p. 123.
- [50] A. E. Willner, K. M. Feng, J. Cai, S. Lee, J. Peng and H. Sun, “*Tunable compensation of channel degrading effects using nonlinearly chirped passive fiber Bragg gratings*”, IEEE Journal of Selected Topics in Quantum Electronics, vol.: 5, n° 5, p. 1298, Sep./Oct. 1999.
- [51] C. D. Poole, R. E. Wagner, “*Phenomenological Approach to Polarization Mode Dispersion in Long Single-Mode Fibers*”, Electronics Letters, vol.: 22, n° 19, September 1986, p. 1029.
- [52] H. Bülow, “*Limitation of optical first-order PMD compensation Technique*”, Optical Fiber Communication Conference, 1999, OFC'99. Technical Digest, vol.: 2, 1999, p. 74, WE1
- [53] J. H. Winters and M. A. Santoro, “*Experimental Equalization of Polarization Dispersion*”, IEEE Photonics Technology Letters, vol.: 2, n° 8, August 1990, p. 591.
- [54] H. Bülow, R. Ballentin, W. Baumert, G. Maisonneuve, G. Thielecke and T. Weren, “*Adaptative PMD Mitigation at 10 Gb/s Using an Electronic SiGe Equalizer IC*”, Proc. ECOC'99, Nice, France, Paper II-138, 1999.
- [55] B. W. Hakki, “*Polarization Mode Dispersion Compensation by Phase Diversity Detection*”, IEEE Photonics Technology Letters, vol.: 9, n° 1, January 1997, p. 121.
- [56] T. Ono, S. Yamazaki, H. Shimizu and K. Emura, “*Polarization Control for Suppressing Polarization Mode Dispersion Influence in Optical Transmission Systems*”, IEEE Journal of Lightwave Technology, vol.: 12, n° 5, May 1994, p. 891.
- [57] C. Francia, F. Bruyère, J. P. Thiéry and D. Penninckx, “*Simple Dynamic Polarization Mode Dispersion Compensator*”, Electronics Letters, vol.: 35, n° 5, March 1999, p. 414.
- [58] D. A. Waltley, K. S. Farley, B. J. Shaw, W. S. Lee, G. Bordogna, A. P. Hadjifotiou and R. E. Epworth, “*Compensation of Polarization-Mode Dispersion Exceeding one Bit Period Using Single High-Birrefringence Fibre*”, Electronics Letters, vol.: 35, n° 13, June 1999, p. 1094.
- [59] T. Takahashi, T. Imai and M. Aiki, “*Automatic Compensation Technique for Timewise Fluctuating Polarization Mode Dispersion in In-line Amplifier Systems*”, Electronics Letters, vol.: 30, n° 4, February 1994, p. 348.

- [60] D. Penninckx, F. Roy, S. Lanne and J. P. Thiéry, “*Statistical Study of Dynamic Polarization-Mode Dispersion (PMD) Compensation Based on Degree of Polarization Monitoring*”, Microwave and Optical Technology Letters, vol.: 26, n° 1, July, 2000, p.41.
- [61] Z. Pan, Y. Xie, S. Lee, A. E. Willner, V. Grubsky, D. S. Starodubov and J. Feinberg, “*Chirp-free Tunable PMD Compensation Using Hi-Bi Nonlinearly-Chirped FBGs in a Dual-Pass Configuration*”, Proc. OFC’2000, vol.: 3, ThH2, 2000, p. 113.
- [62] D. Penninckx and S. Lanne, “*Ultimate Limits of Optical Polarization-Mode Dispersion Compensators*”, Proc. ECOC’2000, September 2000, Munich, Germany, vol.: 3, 3.8, p. 205.
- [63] M. Karlsson, C. Xie, H. Sunnerud and P. A. Andrekson, “*Higher Order Polarization Mode Dispersion Compensator With Three Degrees of Freedom*”, Optical Fiber Communication Conference Proceedings, OFC’2001, vol.: 1, MO1, 2001, p. 1.
- [64] F. Roy, C. Francia, F. Bruyere, D. Penninckx, “*A Simple Dynamic Polarization Mode Dispersion Compensator*”, Optical Fiber Communication Conference Proceedings, OFC’99, vol.: 1, TuS4, 1999, p. 275.
- [65] S. Lanne, J. P. Thiery, D. Penninckx, J. P. Hamaide, J. P. Soige, B. Desthieux, J. Le Briand, L. Mace and P. Gavignet, “*Field Optical PMD Compensation at 10 Gb/s Over Installed Fiber, Totaling 35 ps of PMD*”, Proc. ECOC’2000, Munich, Germany, September 2000, p. 207.
- [66] H. Rosenfeldt, Ch. Knothe, R. Ulrich, E. Brinkmeyer, U. Feiste, C. Schubert, J. Berger, R. Ludwing, H. G. Weber, A Ehrhardt, “*Automatic PMD Compensation at 40 Gb/s and 80 Gb/s Using a 3-Dimensional DOP Evaluation for Feedback*”, Proc. OFC’2001, Anaheim, CA, USA, Postdeadline Paper - PD27, 2001.
- [67] J. M. Fini, P. C. Chou, H. A. Haus, “*Estimation of Polarization Dispersion Parameters for compensation with reduced Feedback*”, Proc. OFC’2001, Anaheim, CA, USA, WAA6, 2001.
- [68] P. C. Chou, J. M. Fini, H. A. Haus, “*Real-Time Principal State Characterization for Use in PMD Compensators*”, IEEE Photonics Technology Letters, vol.: 13, n° 6, June 2001, p. 568.
- [69] H. Rosenfeldt, r. Ulrich, E. Brinkmeyer, U. Feiste, C. Schubert, J. Berger, R. Ludwing, H. G. Weber, A. Ehrhardt, “*Feed-Forward Approach for Automatic PMD-Compensation at 80 Gb/s over 45 km Installed Single Mode Fiber*”, Proc. ECOC 2001, September 2001, Amsterdam, The Netherlands, Postdeadline Paper PD 4.8, p. 135.
- [70] N. Kikuchi, “*Analysis of Signal Degree of Polarization Degradation Used as Control Signal for Optical Polarization Mode Dispersion Compensation*”, IEEE Journal of Lighthwave Technology, vol. 19, n°: 4, April 2001, p. 480.

- [71] P. C. Chou, J. M. Fini, H. A. Haus, “*Demonstration of a Feed-Forward PMD Compensation Technique*”, IEEE Photonics Technology Letters, vol.: 14, n° 2, February 2002, p. 161.
- [72] H. Bülow, W. Baumert, F. Buchali, W. Kuebart, “*Adaptation of an Electronic PMD Mitigator by Maximization of the Eye Opening*”, Proc. ECOC’2000, September 2000, Munich, Germany, 3.10, p. 209.
- [73] M. Fregolent, S. Herbst, H. Soehnle, B. Wedding, “*Adaptative Optical Receiver for Perfomance Monitoring and Electronic Mitigation of Transmission Components*”, Proc. ECOC’2000, September 2000, Munich, Germany, 2.1.2, p. 63.
- [74] D. Sandel, S. Hinz, M. Yoshida-Dierolf, J. Gräser, R. Noé, L. Beresnev, T. Weyrauch, W. Haase, “*10 Gb/s PMD Compensation Using Deformed Helical Ferroelectric Liquid Crystals*”, Proc. ECOC’98, September 1998, Madrid, Spain, p. 555.
- [75] N. G. Walker, G. R. Walker, “*Endless Polarization Control Using Four Fibre Squeezers*”, Electronics Letters, vol.: 23, n° 6, March 1987, p. 290.
- [76] C. Glingener, A. Schopflin, A. Farbert, G. Fischer, R. Noe, D. Sandel, S. Hinz, M. Yoshida-Derolf, V. Mirvoda, G. Feise, H. Hermann, R. Ricken, W. Sohler and F. Wehrmann, “*Polarization Mode Dispersion Compensation at 20 Gb/S with a Compact Distributed Equalizer in LiNbO<sub>3</sub>*”, Optical Fiber Communication Conference Proceedings, OFC’99, Postdeadline paper, vol.: supplement, 1999, PD29.
- [77] L.-S Yan, C. Yeh, G. Yang, L. Lin, Z. Chen, Y. Q. Shi, X. S. Yao, “*Fast Digitally Variable Differential Group Delay Module Using Polarization Switching*”, Optical Fiber Communication Conference Proceedings, OFC’2002, 2002, FA5, p. 820.
- [78] T. Kudou, M. Iguchi, M. Masuda and T. Ozeki, “*Theoretical Basis of Polarization Mode Dispersion Equalization up to the Second Order*”, IEEE Journal of Lighthwave Technology, vol. 18, n°: 4, April 2000, p. 614.
- [79] J. Poirrier, F. Buchali, H. Bulow, S. Lanne and E. Corbel, “*Higher order PMD canceller*”, Optical Fiber Communication Conference Proceedings, OFC’2002, 2002, WL4, p. 236.
- [80] J. Poirrier, H. Bulow and F. Buchali, “*Optical PMD Compensation Performance: Numerical Assessment*”, Optical Fiber Communication Conference Proceedings, OFC’2002, 2002, WL3, p. 234.
- [81] M. W. Chbat, J.-P. Soignb, T. Fuerst, J. T. Anthony, S. Lanne, H. Fevrier, B. M. Desthieux, A. H. Bush, D. Penninckx, “*Long Term Field Demonstration of Optical PMD Compensation on an Installed OC-192 Link*”, Optical Fiber Communication Conference Proceedings, Postdeadline paper, OFC’99, 1999, PD12.

- [82] D. Waltley, K. S. Farley, W. S. Lee, G. Bordogna, B. J. Shaw, A. P. Hadjifotiou, “*Field Evaluation of an Optical PMD Compensator Using an Installed 10 Gbit/S System*”, Optical Fiber Communication Conference Proceedings, OFC’2000, vol.: 3, ThB6, p. 37.
- [83] T. Ono, Y. Yano, L. D. Garret, J. A. Nagel, M. J. Dickerson and M. Cvijetic, “*10 Gb/s PMD Compensation Field Experiment Over 452 km Using Principal State Transmission Method*”, Optical Fiber Communication Conference Proceedings, OFC’2000, Postdeadline paper, PD44, p. 299.
- [84] R. Khosravani, S. A. Havstad, Y. W. Song, P. Ebrahimi and A. E. Willner, “*Simultaneous PMD Compensation of Multiple WDM Channels Using a Single Compensator*”, Proc. ECOC 2000, September 2000, Munich, Germany, vol.: 2, 4.2.6, p. 45.
- [85] D. Mahgerefteh and C. R. Menyuk, “*Effect of First-Order PMD Compensation on the Statistics of Pulse Broadening in a Fiber With Randomly Varying Birefringence*”, IEEE Photonics Technology Letters, vol.: 11, n° 3, March 1999, p. 340.
- [86] W. Shieh, “*Accelerated Outage Probability Testing for PMD Induced Impairment*”, IEEE Photonics Technology Letters, vol.: 12, n° 10, October 2000, p. 1364.
- [87] M. Karlsson, “*Polarization mode dispersion mitigation - performance of various approaches*”, Optical Fiber Communication Conference Proceedings, OFC’2002, WL1, p. 17.
- [88] Q. Yu and A. E. Willner, “*Performance Limits of First-Order PMD Compensators Using Fixed and Variable DGD Elements*”, IEEE Photonics Technology Letters, vol.: 14, n° 13, March 2002, p. 304.