





















- [19] J. Ongpeng, M. Soberano, A. Oreta, and S. Hirose, "Artificial neural network model using ultrasonic test results to predict compressive stress in concrete," *Computers and Concrete*, vol. 19, no. 1, pp. 59-68, Jan. 2017, DOI: 10.12989/CAC.2017.19.1.059.
- [20] D. Y. Yoo, H. O. Shin, and Y. S. Yoon, "Ultrasonic Monitoring of Setting and Strength Development of Ultra-High-Performance Concrete," *MDPI, Materials*, vol. 9, no. 4, art. 294, Apr. 2016, DOI: 10.3390/ma9040294.
- [21] M. Ju, K. Park, and H. Oh, "Estimation of Compressive Strength of High Strength Concrete Using Non-Destructive Technique and Concrete Core Strength," *MDPI, Appl. Sci.*, vol. 7, no. 12, art. 1249, Dec. 2017, DOI: 10.3390/app7121249.
- [22] L. A. Camara, M. Wons, I. C. A. Esteves, and R. A. Medeiros-Junior, "Monitoring the Self-healing of Concrete from the Ultrasonic Pulse Velocity," *MDPI, J. Compos. Sci.*, vol. 3, no. 1, art. 16, Feb. 2019, DOI: 10.3390/jcs3010016.
- [23] I. Lillamand, J. F. Chaix, M. A. Ploix, and V. Garnier, "Acoustoelastic effect in concrete material under uni-axial compressive loading," *Elsevier, NDT & E International*, vol. 43, no. 8, pp. 655-660, Nov. 2010, DOI: 10.1016/j.ndteint.2010.07.001.
- [24] C. L. Nogueira, and K. L. Rens, "Acoustoelastic Response of Concrete under Uniaxial Compression," *ACI Materials Journal*, vol. 116, no. 3, pp. 21-33, May 2019, DOI: 10.14359/51714462.
- [25] L. H. Chen, W. C. Chen, Y. C. Chen, H. J. Lin, C. F. Cai, M. Y. Lei, T. C. Wang, K. W. Hsu, "Using Ultrasonic Pulse and Artificial Intelligence to Investigate the Thermal-Induced Damage Characteristics of Concrete," *MDPI, Appl. Sci.*, vol. 8, no. 7, art. 1107, Jul. 2018, DOI:10.3390/app8071107.
- [26] J. C. Ongpeng, A. C. Oreta, and S. Hirose, "Investigation on the Sensitivity of Ultrasonic Test Applied to Reinforced Concrete Beams Using Neural Network". *MDPI, Appl. Sci.*, vol. 8, no. 3, art. 405, Mar. 2018, DOI: 10.3390/app8030405.
- [27] J. K. Wight, and J. G. Macgregor, "Materials in Reinforced Concrete: Mechanics and Design, 6th Ed., Upper Saddle River, New Jersey: Pearson Education, Inc., 2012, <http://www.civillittechu.com/uploads/1/RC2/book6th.pdf>.
- [28] F. E. Richart, A. Brantzaeg, and R. L. Brown, "A study of the failure of concrete under combined compressive stresses," University of Illinois, Eng'g Expt. Sta., bull. 185, Nov. 1928. [Online]. Available: <http://hdl.handle.net/2142/4277>.
- [29] R. L'Hermite, "Present-day ideas on concrete technology. Part 3: The failure of concrete," *RILEM*, bull. 18, pp. 27-39, Jun. 1954.
- [30] H. Rusch, "Physikalische Fragen der Betonprüfung," *Zement-Kalk-Gips*, vol. 12, no. 1, pp. 1-9, 1959.
- [31] R. Sell, "Investigation into the strength of concrete under sustained loads," *RILEM*, bull. 5, pp. 5-13, 1959.
- [32] T. C. Hsu, F. O. Slate, G. M. Sturman, and G. Winter, "Micro-cracking of Plain Concrete and the Shape of the Stress-Strain Curve," *ACI Journal*, vol. 60, no. 2, pp. 209-224, 1963, DOI: 10.14359/7852.
- [33] F. O. Slate, and S. Olsefski, "X-Rays for the study of internal structure and microcracking of concrete," *ACI Journal*, vol. 60, no. 5, pp. 575-588, May 1963, DOI: 10.14359/7869
- [34] K. Newman. "Criteria for the behavior of plain concrete under complex state of stress," In *Proc. Int. Conf. on the Struc. of Conc.: Cement and Conc. Assoc.*, London, 1968, pp. 575-588.
- [35] T. T. C. Hsu, "Fatigue and Microcracking of Concrete," *Mat. Constr.*, vol. 17, pp. 51-54, Jan. 1984, DOI: 10.1007/BF02474056.
- [36] P. Shokouhi, A. Zoëga, H. Wiggerhauser, and G. Fischer, "Surface Wave Velocity-Stress Relationship in Uniaxially Loaded Concrete," *ACI Materials Journal*, vol. 109, no. 2, pp. 141-148, Mar. 2012, DOI: 10.14359/51683700.
- [37] Y. Zhang, O. Abraham, F. Grondin, A. Loukili, V. Tournat, A. LeDuff, and O. Durand, "Study of stress-induced velocity variation in concrete under direct tensile force and monitoring of the damage level by using thermally-compensated Coda Wave Interferometry," *Elsevier, Ultrasonics*, vol. 52, no. 8, pp. 1038-1045, Aug. 2012, DOI: 10.1016/j.ultras.2012.08.011.
- [38] G. Kim, G. Loreto, J. Y. Kim, K. E. Kurtis, J. J. Wall, and L. J. Jacobs "In situ nonlinear ultrasonic technique for monitoring microcracking in concrete subjected to creep and cyclic loading," *Elsevier, Ultrasonics*, vol. 88, pp. 64-71, Aug. 2018, DOI: 10.1016/j.ultras.2018.03.006.
- [39] J. Huang, M. Chen, and J. Sun, "Mesoscopic characterization and modeling of microcracking in cementitious materials by the extended finite element method," *Elsevier, Theo. and Appl. Mech. Letters*, vol. 4, no. 4, Apr. 2014, DOI: 10.1063/2.1404101.
- [40] B. Wu, Z. Li, K. Tang, and K. Wang, "Microscopic Multiple Fatigue Crack Simulation and Macroscopic Damage Evolution of Concrete Beam," *MDPI, Appl. Sci.*, vol. 9, no. 21, Nov. 2019, DOI: 10.3390/app9214664
- [41] L. M. Katchanov, "On the creep fracture time," In *Proc. Acad. Sci. USSR Div. Eng'g*, vol. 8, 1958, pp. 26-31.
- [42] Y. N. Rabotnov and F. A. Leckie, "Creep Problems in Structural Members," John Wiley & Sons Inc., 1969.
- [43] J. Lemaitre, and J. L. Chaboche, "Damage Mechanics," in *Mechanics of Solid Materials*, Cambridge, UK, Cambridge University Press, 1990, ch 7, pp. 346-450, DOI: 10.1017/CBO9781139167970.011.
- [44] G. Z. Voyiadjis and S. Yip, "Continuum Damage Mechanics," In *Handbook of Materials Modeling*, 1st ed., Netherlands, Springer, 2005, ch 3, sec. 3.8, pp. 1183-1192. [Online]. Available: [https://link.springer.com/chapter/10.1007/978-1-4020-3286-8\\_60](https://link.springer.com/chapter/10.1007/978-1-4020-3286-8_60).
- [45] J. Lemaitre, "Evaluation of dissipation and damage in metals submitted to dynamic loading," *ICM*, Kyoto, Japan, 1971.
- [46] J. L. Chaboche, "Une Loi Differentielle d'Endommagement de Fatigue avec Cumulation Non-Lineaire," *Rev. Francaise Mecanique*, pp. 50-51, 1974.
- [47] F. A. Leckie, and D. Hayhurst, "Creep rupture of structures," In *Proc. of the Royal Society*, London, UK, 1974, pp. 323-347, DOI: 10.1098/rspa.1974.0155.
- [48] J. Hult, (1974). "Creep in continua and structures," In *Proc. appl. Continuum mech.*, Springer, New York, 1974, pp. 137-155.
- [49] J. L. Chaboche, and J. Lemaitre, "A Nonlinear Model of creep-fatigue cumulation and interaction," In *Proc. of IUTAM, Symp. on Mech. of Viscoelastic Media and Bodies*, 1975, pp. 291-301.
- [50] J. Lemaitre, and J. Dufailly, "Modelisation et Identification de l'Endommagement Plastique de Metaux," *Zeme Congres Francaise de Mecanique*, Grenoble, 1977.
- [51] J. Lemaitre, "A continuous damage mechanics model for ductile fracture," *J. Eng. M. Technol.*, vol. 107, pp. 83-89, 1985.
- [52] J. Lemaitre, "How to use Damage Mechanics," *Elsevier, Nuclear Engineering and Design*, vol. 80, no. 2, pp. 223-245, Jul. 1984, DOI: 10.1016/0029-5493(84)90169-9.
- [53] T. Pardoan, F. Delannay, and I. Doghri, "On the use of the Lemaitre and Chaboche model for the prediction of ductile fracture by void coalescence," *Int. Journal of Fracture*, vol. 88, no. 4, pp. 71-76, 1998.
- [54] J. Schlaich, and K. Schafer, "Design and detailing of structural concrete using strut-and-tie models," *The Structural Engineer*, vol 69, no.6, pp. 113-125, Mar. 1991. [Online]. Available: [http://www.ime.eb.br/~webde2/prof/ethomaz/bloco\\_sobre\\_estacas/biela\\_tirante.pdf](http://www.ime.eb.br/~webde2/prof/ethomaz/bloco_sobre_estacas/biela_tirante.pdf).