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Nota di contenuto	Coherent Laser Beam Combining; Contents; Preface; Acronyms; List of Contributors; Part One: Coherent Combining with Active Phase Control; 1 Engineering of Coherently Combined, High-Power Laser Systems; 1.1 Introduction; 1.2 Coherent Beam Combining System Requirements; 1.3 Active Phase-Locking Controls; 1.3.1 Optical Heterodyne Detection; 1.3.2 Synchronous Multidither; 1.3.3 Hill Climbing; 1.4 Geometric Beam Combining; 1.4.1 Tiled Aperture Combiners; 1.4.2 Filled Aperture Combiners Using Diffractive Optical Elements; 1.4.2.1 Overview of DOE Combiners; 1.4.2.2 DOE Design and Fabrication 1.4.2.3 DOE Thermal and Spectral Sensitivity1.5 High-Power Coherent Beam Combining Demonstrations; 1.5.1 Coherent Beam Combining of Zigzag Slab Lasers; 1.5.2 Coherent Beam Combining of Fiber Lasers; 1.5.2.1 Phase Locking of Nonlinear Fiber Amplifiers; 1.5.2.2 Path Length Matching with Broad Linewidths; 1.5.2.3 Diffractive CBC of High-Power Fibers; 1.5.2.4 CBC of Tm Fibers at 2 m; 1.6 Conclusion; Acknowledgments; References; 2 Coherent Beam Combining of Fiber Amplifiers via LOCSET; 2.1 Introduction; 2.1.1 Beam Combination Architectures; 2.1.2 Active and Passive Coherent Beam Combining 2.2 Locking of Optical Coherence by Single-Detector Electronic-Frequency Tagging2.2.1 LOCSET Theory; 2.2.2 Self-Referenced LOCSET; 2.2.2.1 Photocurrent Signal; 2.2.2.2 LOCSET Demodulation;

2.2.3 Self-Synchronous LOCSET; 2.3 LOCSET Phase Error and Channel Scalability; 2.3.1 LOCSET Beam Combining and Phase Error Analysis; 2.3.2 In-Phase and Quadrature-Phase Error Analysis; 2.3.3 Two-Channel Beam Combining; 2.3.4 16-Channel Beam Combining; 2.3.5 32-Channel Beam Combining; 2.4 LOCSET High-Power Beam Combining; 2.4.1 Kilowatt-Scale Coherent Beam Combining of Silica Fiber Lasers  
2.4.2 Kilowatt-Scale Coherent Beam Combining of Photonic Crystal Fiber Amplifiers  
2.5 Conclusion; References; 3 Kilowatt Coherent Beam Combining of High-Power Fiber Amplifiers Using Single-Frequency Dithering Techniques; 3.1 Introduction; 3.1.1 Brief History of Coherent Beam Combining; 3.1.2 Coherent Beam Combining: State of the Art; 3.1.3 Key Technologies for Coherent Beam Combining; 3.2 Single-Frequency Dithering Technique; 3.2.1 Theory of Single-Frequency Dithering Technique; 3.2.2 Kilowatt Coherent Beam Combining of High-Power Fiber Amplifiers Using Single-Frequency Dithering Technique  
3.2.3 Coherent Polarization Beam Combining of Four High-Power Fiber Amplifiers Using Single-Frequency Dithering Technique  
3.2.4 Target-in-the-Loop Coherent Beam Combination of Fiber Lasers Based on Single-Frequency Dithering Technique; 3.3 Sine-Cosine Single-Frequency Dithering Technique; 3.3.1 Theory of Sine-Cosine Single-Frequency Dithering Technique; 3.3.2 Coherent Beam Combining of Nine Beams Using Sine-Cosine Single-Frequency Dithering Technique; 3.4 Summary; References; 4 Active Coherent Combination Using Hill Climbing-Based Algorithms for Fiber and Semiconductor Amplifiers  
4.1 Introduction to Hill Climbing Control Algorithms for Active Phase Control

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Sommario/riassunto

Recently, the improvement of diode pumping in solid state lasers and the development of double clad fiber lasers have allowed to maintain excellent laser beam quality with single mode fibers. However, the fiber output power is often limited below a power damage threshold. Coherent laser beam combining (CLBC) brings a solution to these limitations by identifying the most efficient architectures and allowing for excellent spectral and spatial quality. This knowledge will become critical for the design of the next generation high-power lasers and is of major interest to many industrial, environmental, and defense applications.

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2. Record Nr.	UNINA9910785876703321
Autore	Laudicina Paul A
Titolo	Beating the global odds [[electronic resource] ] : successful decision-making in a confused and troubled world / / Paul A. Laudicina
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Nota di contenuto	Praise for Beating the Global Odds; Title page; Copyright page; Contents; Foreword; Introduction; Chapter 1: Global Brain Freeze; More Has Become (Much) Less; Think Pinball, Not Roulette; Disorientation and Decision Analysis; Chapter 2: Fast and Fickle; Lumbering Giants; Watch Out for Those Tuning Out and Checking Out; Chapter 3: Rudderless World; Tea Party, Occupy Movements: Birds of a Feather?; Privatizing the Gains, Socializing the Losses; The Three Deficits; Inescapable Trilemma?; The Case for Values-Based Leadership; Chapter 4: Lighten the Load and Make It Sesame Street Simple Sesame Street SimpleCockpit Confusion; Chapter 5: Repair Your Social Fabric; The Three-Line Whip; The Pause Principle; All in the Family; Chapter 6: Don't Wait for the Next Big Thing; Innovation: Slowing Down or Speeding Up? (I Think the Latter); Knowledge Hatcheries; Offer a Prize; Fighting Complexity with Complexity; Coming Soon: Information Overload, Tamed and Ready to Serve You?; Chapter 7: Open the Aperture; Vary Your Information Diet; Be Wary of Conventional Wisdom

and the Usual Experts; The Problem of Being Right Too Early; Tap into Remarkable People and Places  
Chapter 8: Turning Pixels into a Clearer Picture Powerfully Imagined and Rigorously Researched: The Structure of Scenario Thinking; Counterfactuals and Other Futures Thinking; Envisioning the Future to Inform the Present; TOP GEAR; TERMINUS; FLATLINE; CONTROL-ALT-DELETE; The Coming Chinese Commonwealth?; Pulling It All Together and Getting Ready to Beat the Global Odds; Epilogue; Afterword; Selected Bibliography; Acknowledgments; About the Author; Index

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Sommario/riassunto

The Answer to Global Overload Contending with the 24/7 news cycle and an endless barrage of choices and information has stymied leadership and decision-making strategies among those at the top. But we all know, this is not a just a problem for the elite. The broad-based reaction to this chaotic, unmanageable assault has been to retrench, and to focus on immediate, controllable decisions. In the process, we lose sight of the horizon. More dangerous still, is the shift we've seen from value creation to wealth creation, where information technology 1.0 has enabled a

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