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TIPO A

Conjugate phase plate use in analysis of the frequency response of imaging systems designed for extended depth of field

J Ojeda-Castañeda, JEA Landgrave, CM Gómez-Sarabia
Applied optics 47 (22), E99-E105

2017

2016

1.

[Optical characteristics of Alvarez variable-power spectacles](#)

[H Radhakrishnan](#), [WN Charman](#) - ... and *Physiological Optics*, 2017 - Wiley Online Library

6 days ago - Purpose To establish the optical performance of currently available Alvarez variable-power spectacles in relation to their possible utility for ametropes and presbyopes.

Methods Two commercial designs of variable-power (variable-focus) spectacles were

[Cite](#) [Save](#)

[Myths concerning Woodward's ambiguity function: analysis and resolution](#)

[C Baylis](#), [L Cohen](#), [D Eustice](#)... - *IEEE Transactions on ...*, 2016 - [ieeexplore.ieee.org](#)

6 days ago - Abstract: Woodward's ambiguity function measures the ability of a radar signal

to simultaneously measure the range of an object via time delay and its velocity using Doppler shift. The ambiguity function is a foundational staple in radar signal processing.

Six

[Cite](#) [Save](#)

2015

2.

[Novel Optical Systems Design and Optimization XVIII](#)

[GG Gregory, AJ Davis... - Proc. of SPIE ..., 2015 - proceedings.spiedigitallibrary.org](#)

abstract This PDF file contains the front matter associated with SPIE Proceedings Volume

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2014

3.

[Aberration analysis of optimized Alvarez–Lohmann lenses](#)

[A Grewe, M Hillenbrand, S Sinzinger - Applied optics, 2014 - osapublishing.org](#)

In this paper aberrations in Alvarez–Lohmann lenses are analyzed, and a semi-analytical strategy for compensation is derived. An x–y polynomial model is used to describe the aberrations and classify them into static and dynamic components. The lenses are

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4.

[Conjugate phase plate use in analysis of the frequency response of imaging systems designed...](#)

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[Tunable wavefront coded imaging system based on detachable phase mask:](#)

[Mathematical analysis, optimization and underlying applications](#)

[H Zhao, J Wei - Optics Communications, 2014 - Elsevier](#)

Abstract The key to the concept of tunable wavefront coding lies in detachable phase masks.

Ojeda-Castaneda et al. (Progress in Electronics Research Symposium Proceedings, Cambridge, USA, July 5–8, 2010) described a typical design in which two components with

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5.

[Bandwidth Tunable Wave-front Coded Imaging System](#)

[H Zhao, J Wei - Computational Optical Sensing and Imaging, 2014 - osapublishing.org](#)

In traditional wave-front coded imaging system, the physical form of phase mask could not be

modified dynamically and therefore the defocus invariance characteristic is pre-determined.

Recently, the concept of tunable wave-front coding turns up [1-5]. In [1], Jorge Ojeda-Castaneda

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2012

6.

[Computational Optics](#)

[JI Brent, M Barnum, S Corrales, N Ding, K Green...](#) - 2012 - [arizona.openrepository.com](#)

Many aerospace sensor platforms have a fixed opto-mechanical layout due to harsh environmental conditions. This design decision results in tight opto-mechanical tolerances.

Computational optics is a technology that is currently used in the commercial market, but has

[Tunable apodizers and tunable focalizers using helical pairs](#)

[J Ojeda-Castaneda, S Ledesma, CM Gomez-Sarabia](#)

[Photonics Letters of Poland](#) 5 (1), 20-22

2017

7.

[Diffractive array optics tuned by rotation](#)

[A Grewe, P Fesser, S Sinzinger](#) - [Applied Optics](#), 2017 - [osapublishing.org](#)

In this work, we apply the Alvarez–Lohmann principle for varifocal lenses to diffractive off-axis elements tuned by rotation. Two methods to combine multiple elements into arrays are

presented. Further, we show that inverse phase sections result from a 2π ambiguity of the

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8.

[\[HTML\] Multi-color operation of tunable diffractive lenses](#)

[S Bernet, M Ritsch-Marte](#) - [Optics Express](#), 2017 - [osapublishing.org](#)

Abstract Rotationally tunable diffractive optical elements (DOEs) consist of two stacked diffractive optical elements which are rotated with respect to each other around their central

optical axis. The combined diffractive element acts as a highly efficient diffractive lens, which

2014

Bandwidth Tunable Wave-front Coded Imaging System

H Zhao, J Wei - *Computational Optical Sensing and Imaging*, 2014 - osapublishing.org

In traditional wave-front coded imaging system, the physical form of phase mask could not be

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Optical processor arrays for controlling focal length or for tuning the depth of field

JO Castaneda, CM Gómez-Sarabia

Photonics Letters of Poland 3 (1), 44-46

2017

9.

Diffractive array optics tuned by rotation

A Grewe, P Fesser, S Sinzinger - *Applied Optics*, 2017 - osapublishing.org

In this work, we apply the Alvarez–Lohmann principle for varifocal lenses to diffractive off-axis elements tuned by rotation. Two methods to combine multiple elements into arrays are

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Tuning field depth at high resolution by pupil engineering

J Ojeda-Castañeda, CM Gómez-Sarabia

Advances in Optics and Photonics 7 (4), 814-880

2016

10.

Image enhancement by spatial frequency post-processing of images obtained with pupil filters

[I Estévez](#), [JC Escalera](#), [QP Stefano](#), [C Iemmi](#)... - *Optics ...*, 2016 - Elsevier

The use of apodizing or superresolving filters improves the performance of an optical system

in different frequency bands. This improvement can be seen as an in.

11.

Dependence of depth of focus on spherical aberration of optical systems

[A Mikš](#), [J Novák](#) - *Applied Optics*, 2016 - [osapublishing.org](#)

This paper presents a theoretical analysis and computation of aberration coefficients of the

third and fifth order of transverse spherical aberration of an optical system, which generates

a ray bundle with a diameter of a geometric-optical circle of confusion smaller than a

12.

Engineering of apodizer filters in the optical imaging using a set of phase plates

[O Palillero-Sandoval](#)... - *Optical ...*, 2016 - [opticalengineering.spiedigitallibrary. ...](#)

Abstract. A numerical study of the performance of a set of phase masks and apodizer filters,

which are able to extend the depth of field (DOF) in the imaging system, are presented using

a test object with different levels of gray. The ambiguity function is used to display which of

13.

Tunable Gaussian mask for extending the depth of field

J Ojeda-Castaneda, E Yépez-Vidal, E García-Almanza, ...
Photonics Letters of Poland 4 (3), 115-117

2015

17.

Novel Optical Systems Design and Optimization XVIII

GG Gregory, AJ Davis... - Proc. of SPIE ..., 2015 - proceedings.spiedigitallibrary.org

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Optical processor arrays for controlling focal length or for tuning the depth of field

JO Castaneda, CM Gómez-Sarabia
Photonics Letters of Poland 3 (1), 44-46

19.

Published by

A Grewe, S Sinzinger, P Feßler - osapublishing.org

Phase plates, which realize a tunable optical function due to a relative lateral displacement

are well known since the patents of Adolf W. Lohmann and Luis W. Alvarez [1, 2]. They described eg cubic phase plate pairs positioned in a way that their optical functions

Hyper Gaussian windows with fractional wavefronts

J Ojeda-Castaneda, S Ledesma, CM Gomez-Sarabia

Photonics Letters of Poland 5 (1), 23-25

2015

20

Novel Optical Systems Design and Optimization XVIII

GG Gregory, AJ Davis... - *Proc. of SPIE ...*, 2015 - proceedings.spiedigitallibrary.org

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Applied optics 52 (10), D84-D91

2016

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Image enhancement by spatial frequency post-processing of images
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[I Estévez](#), [JC Escalera](#), [QP Stefano](#), [C Iemmi](#)... - Optics ..., 2016 - Elsevier

The use of apodizing or superresolving filters improves the performance of an optical system

in different frequency bands. This improvement can be seen as an in.

22.

A non-mechanical zoom lens fabricated from liquid crystal reactive
mesogens

[K Gao](#), [A Bhowmik](#), [C McGinty](#)... - SPIE Organic ..., 2016 -
[proceedings.spiedigitallibrary.org](#)

abstract A low $f/\#$ lens and zoom lens system based on Pancharatnam phase are
presented.

The design, fabrication, and characterization of these devices are shown. The unique
characteristics of these devices is made possible by the use of azo-dye photoalignment
to

2015

23.

Novel Optical Systems Design and Optimization XVIII

[GG Gregory](#), [AJ Davis](#)... - Proc. of SPIE ..., 2015 - [proceedings.spiedigitallibrary.org](#)

abstract This PDF file contains the front matter associated with SPIE Proceedings
Volume

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the Conference Committee listing.©(2014) COPYRIGHT Society of Photo-Optical

Temporal Lau effect: Noncoherent regeneration of periodic pulse
trains

[J Lancis](#), [CM Gómez-Sarabia](#), [J Ojeda-Castañeda](#), [CR Fernández-Pousa](#), ...

Journal of the European Optical Society-Rapid publications 1

2014

24.

[\[HTML\]](#) Temporal cloaking for data suppression and retrieval

JM Lukens, [AJ Metcalf](#), DE Leaird, [AM Weiner](#) - *Optica*, 2014 - [osapublishing.org](#)

Recent research on time cloaking has revealed a fascinating approach to hide temporal events from an interrogating optical field, by opening up and subsequently closing intensity

gaps in a probe beam. Experiments thus far have demonstrated temporal cloaking of

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[Tunable focalizers: axicons, lenses, and axilenses](#)

J Ojeda-Castaneda, CM Gómez-Sarabia, S Ledesma

SPIE Optical Engineering+ Applications, 883306-883306-6

2016

25

[Efficient quantization of tunable helix phase plates](#)

[A Grewe](#), [S Sinzinger](#) - *Optics Letters*, 2016 - [osapublishing.org](#)

Helix phase plates are used in a variety of applications from optical trapping to astronomy.

Tunable helix phase plates based on the Alvarez–Lohmann principle allow variation of the

topological charge of the helix by rotating the phase plates with respect to each other around

[Key concepts for extending the depth of field with high resolution](#)

J Ojeda-Castañeda, CM Gómez-Sarabia

Opt. Lett 10, 520-522

2016

Engineering of apodizer filters in the optical imaging using a set of phase plates

O Palillero-Sandoval... - Optical ..., 2016 - opticalengineering.spiedigitallibrary. ...

Abstract. A numerical study of the performance of a set of phase masks and apodizer filters, which are able to extend the depth of field (DOF) in the imaging system, are presented using a test object with different levels of gray. The ambiguity function is used to display which of

Moire patterns: nonconventional applications

Jorge Ojeda-Castaneda ; Cristina M. Gomez-Sarabia ; Jose A. Soto-Sanchez, *Proc. SPIE* 4392, Optical Processing and Computing: A Tribute to Adolf Lohmann, 60 (July 6, 2001); doi:10.1117/12.432790.

Multistage growth of monocrystalline ZnO nanowires and twin-nanorods: oriented attachment and role of the spontaneous polarization force

B Fan, Y Zhang, R Yan, J Fan - *CrystEngComm*, 2016 - pubs.rsc.org

Our understanding of crystal growth mechanisms has changed deeply in the past few decades. Particularly, the oriented attachment of intermediate nanoparticles has been accepted to be a crucial crystal growth mechanism that is distinct from the traditional one

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TIPO B

Conjugate phase plate use in analysis of the frequency response of imaging systems designed for extended depth of field

J Ojeda-Castañeda, JEA Landgrave, CM Gómez-Sarabia
Applied optics 47 (22), E99-E105

2015

1

[Tuning field depth at high resolution by pupil engineering](#)

[J Ojeda-Castañeda...](#) - [Advances in Optics and ...](#), 2015 - [osapublishing.org](#)

We present a simple comprehensive treatment on the use of free-form optical elements, and

of nonuniform optical windows, either for increasing focal depth [by regulating the width of the axial point spread function (PSF)] or for tuning the depth of field [by controlling the

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2

[Aberration generators in tandem](#)

[JO Castaneda, AL Barragán-Chávez...](#) - [Photonics Letters of ...](#), 2015 - [photonics.pl](#)

Abstract We discuss the use of a pair of phase masks, which have both radial and helical variations, for optically implementing wavefront aberration generator. We show that by using

these masks one can change continuously the aberration coefficients of both symmetric and

3

[Optical Processors as Conceptual Tools for Designing Nonconventional Devices](#)

[J Ojeda-Castañeda, S Ledesma, E Yépez-Vidal...](#) - [Advanced Lasers](#), 2015 - Springer

Abstract We discuss the use of nonconventional optical processors for generating irradiance

distributions, which are useful for visualizing the characteristics of imaging devices that extend the depth of field. Our discussion starts with the use of binary masks for generating

2017

4

[Tunable field depth: hyperbolic optical masks](#)

[L Ledesma-Carrillo, R Guzmán-Cabrera...](#) - [Applied ...](#), 2017 - [osapublishing.org](#)

For controlling the depth of field, in an optical system working at full pupil apertures, we unveil the use of a pair of hyperbolic phase masks. For suitably framing our proposal, we link

the Strehl ratio versus defocus with the area under the modulation transfer function (MTF).

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[Tunable apodizers and tunable focalizers using helical pairs](#)

J Ojeda-Castaneda, S Ledesma, CM Gomez-Sarabia

Photonics Letters of Poland 5 (1), 20-22.

2015

5

[Tunable Optical Masks for extended Depth of Field](#)

[J Ojeda-Castañeda](#) - [Frontiers in Optics, 2015 - osapublishing.org](#)

FTh4D.6.pdf Frontiers in Optics/Laser Science 2015 © OSA 2015 ... Tunable Optical
Masks for

extended Depth of Field ... Cristina M. Gómez-Sarabia and Jorge Ojeda-Castañeda
Universidad

de Guanajuato, Salamanca Guanajuato 36885, México jojedacas@ugto.mx ... Abstract:
We

6

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and

2014

7

[Novel free-form optical pairs for tunable focalizers](#)

[J Ojeda-Castañeda](#), [CM Gómez-Sarabia](#), [S Ledesma](#) - [Journal of Optics](#), 2014 - Springer

Abstract We unveil the use of a pair of free-form refractive elements for optically
implementing tunable phase delays, over several annularly distributed regions, which are
here represented by a binary function. We show that there is a closely related technique,

8

[Optical Processors as Conceptual Tools for Designing Nonconventional
Devices](#)

[J Ojeda-Castañeda](#), [S Ledesma](#), [E Yépez-Vidal](#)... - [Advanced Lasers](#), 2015 - Springer

Abstract We discuss the use of nonconventional optical processors for generating
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9

[Tunable field depth: hyperbolic optical masks](#)

[L Ledesma-Carrillo, R Guzmán-Cabrera...](#) - [Applied ...](#), 2017 - [osapublishing.org](#)

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10

[Tunable Optical Masks for extended Depth of Field](#)

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FTh4D.6.pdf [Frontiers in Optics/Laser Science 2015](#) © OSA 2015 ... Tunable Optical Masks for

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Universidad

de Guanajuato, Salamanca Guanajuato 36885, México jojedacas@ugto.mx ... Abstract: We

11

[Nonconventional optical systems using varifocal lenses](#)

[JO Castaneda, CM Gómez-Sarabia](#) - [Photonics Letters of Poland](#), 2015 - [photonics.pl](#)

Abstract We discuss the first order design of four optical devices, which use varifocal lenses

for implementing the following optical systems: a single-lens zoom system, a two-lens afocal

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JO Castaneda, CM Gómez-Sarabia

[Photonics Letters of Poland](#) 3 (1), 44-46

12

[Tuning field depth at high resolution by pupil engineering](#)

[J Ojeda-Castañeda...](#) - [Advances in Optics and ...](#), 2015 - [osapublishing.org](#)

We present a simple comprehensive treatment on the use of free-form optical elements, and

of nonuniform optical windows, either for increasing focal depth [by regulating the width of the axial point spread function (PSF)] or for tuning the depth of field [by controlling the

13

[Tunable hyperbolic apodizer](#)

[JO Castaneda, L Ledesma, R Valencia](#) - Photonics Letters of Poland, 2015 - photonics.pl

Abstract We unveil the use of two grey level masks for controlling continuously the attenuation of a spatial filter, which has an exponentially decreasing hyperbolic profile.

We

present analytical expressions that help to visualize the influence of our proposed grey level

14

[Dispersion of short pulses: Guigay matrix](#)

[JO Castaneda, CM Gomez-Sarabia](#) - Photonics Letters of Poland, 2015 - photonics.pl

Abstract By employing Guigay coefficients, one can describe in an elegant and useful manner the Fresnel diffraction patterns of a periodic structure. Here, we relate Guigay formulation with the classical Fourier series treatment of first order dispersion. Then, we

[Tuning field depth at high resolution by pupil engineering](#)

J Ojeda-Castañeda, CM Gómez-Sarabia

Advances in Optics and Photonics 7 (4), 814-880.

15

[Comments on "Optimized non-integer order phase mask to extend the depth of field of an imaging system" by Jiang Liu, Erlong Miao, Yongxin Sui, Huaijiang Yang, ...](#)

[J Ojeda-Castañeda](#) - Optics Communications, 2016 - Elsevier

In the last 50 years, several researchers have contributed with methods and techniques for

reducing the influence of focus errors either on the Modulation Transfer Function (MTF) or on

the Point Spread Function [1],[2],[3],[4],[5],[6],[7],[8],[9],[10] and [11].The number of

16

[Tunable field depth: hyperbolic optical masks](#)

[L Ledesma-Carrillo, R Guzmán-Cabrera...](#) - Applied ..., 2017 - osapublishing.org

For controlling the depth of field, in an optical system working at full pupil apertures, we unveil the use of a pair of hyperbolic phase masks. For suitably framing our proposal, we link

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Tunable Gaussian mask for extending the depth of field

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Photonics Letters of Poland 4 (3), 115-117

17

Tunable field depth: hyperbolic optical masks

[L Ledesma-Carrillo, R Guzmán-Cabrera...](#) - *Applied ...*, 2017 - [osapublishing.org](#)

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Tuning field depth at high resolution by pupil engineering

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19

Tunable hyperbolic apodizer

[JO Castaneda, L Ledesma, R Valencia](#) - *Photonics Letters of Poland*, 2015 - [photonics.pl](#)

Abstract We unveil the use of two grey level masks for controlling continuously the attenuation of a spatial filter, which has an exponentially decreasing hyperbolic profile. We present analytical expressions that help to visualize the influence of our proposed grey level

20

Optical Processors as Conceptual Tools for Designing Nonconventional Devices

[J Ojeda-Castañeda, S Ledesma, E Yépez-Vidal...](#) - *Advanced Lasers*, 2015 - Springer

Abstract We discuss the use of nonconventional optical processors for generating irradiance distributions, which are useful for visualizing the characteristics of imaging devices that extend the depth of field. Our discussion starts with the use of binary masks for generating

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J Ojeda-Castaneda, S Ledesma, CM Gomez-Sarabia
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[J Ojeda-Castañeda... - Advances in Optics and ..., 2015 - osapublishing.org](#)

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J Ojeda-Castaneda, CM Gómez-Sarabia, S Ledesma
SPIE Optical Engineering+ Applications, 883306-883306-6

29

Aberration generators in tandem

[JO Castaneda, AL Barragán-Chávez...](#) - *Photonics Letters of ...*, 2015 - [photonics.pl](#)

Abstract We discuss the use of a pair of phase masks, which have both radial and helical variations, for optically implementing wavefront aberration generator. We show that by using these masks one can change continuously the aberration coefficients of both symmetric and

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Nonconventional optical systems using varifocal lenses

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