

Technical University of Denmark



Power dependence of supercontinuum noise in uniform and tapered PCFs: erratum

Møller, Uffe Visbech; Sørensen, Simon Toft; Jakobsen, Christian; Johansen, Jeppe; Moselund, Peter M. ; Thomsen, Carsten L.; Bang, Ole

Published in:
Optics Express

Link to article, DOI:
[10.1364/OE.20.023318](https://doi.org/10.1364/OE.20.023318)

Publication date:
2012

Document Version
Publisher's PDF, also known as Version of record

[Link back to DTU Orbit](#)

Citation (APA):
Møller, U., Sørensen, S. T., Jakobsen, C., Johansen, J., Moselund, P. M., Thomsen, C. L., & Bang, O. (2012). Power dependence of supercontinuum noise in uniform and tapered PCFs: erratum. *Optics Express*, 20(21), 23318-23319. DOI: 10.1364/OE.20.023318

DTU Library

Technical Information Center of Denmark

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Power dependence of supercontinuum noise in uniform and tapered PCFs: erratum

Uffe Møller,^{1,*} Simon T. Sørensen,¹ Christian Jakobsen,²
Jeppe Johansen,² Peter M. Moselund,² Carsten L. Thomsen,² and
Ole Bang^{1,2}

¹*DTU Fotonik, Department of Photonics Engineering, Technical University of Denmark, Ørstedss Plads, DK-2800 Kgs. Lyngby, Denmark*

²*NKT Photonics A/S, Blokken 84, DK-3400 Birkerød, Denmark*

[*ufmo@fotonik.dtu.dk](mailto:ufmo@fotonik.dtu.dk)

Abstract: An error was made in the calculation of the relative intensity noise (RIN) because of an incorrectly specified value of the photodetector DC transimpedance gain.

© 2012 Optical Society of America

OCIS codes: (060.4370) Nonlinear optics, fibers; (060.5295) Photonic crystal fibers; (320.6629) Supercontinuum generation.

References and links

1. U. Møller, S. T. Sørensen, C. Jakobsen, J. Johansen, P. M. Moselund, C. L. Thomsen, and O. Bang, "Power dependence of supercontinuum noise in uniform and tapered PCFs," *Opt. Express* **20**, 2851–2857 (2012).
2. U. Møller, S. T. Sørensen, C. Larsen, P. M. Moselund, C. Jakobsen, J. Johansen, C. L. Thomsen, and O. Bang, "Optimum PCF tapers for blue-enhanced supercontinuum sources," *Opt. Fiber Technol.* (2012), (article in press) <http://dx.doi.org/10.1016/j.yofte.2012.07.010>.

The DC transimpedance gain of the New Focus photodetectors used in [1] was mistakenly specified by the manufacturer to be $G_{DC} = 1 \text{ V/mA}$. The correct DC transimpedance gain is $G_{DC} = 10 \text{ V/mA}$ for an input impedance of 50Ω and $G_{DC} = 20 \text{ V/mA}$ for an infinite input impedance. The AC transimpedance gain for a 50Ω input impedance is as specified $G_{DC} = 40 \text{ V/mA}$. We have now measured these values and they have been confirmed by the manufacturer.

Since the relative intensity noise (RIN) is proportional to $[G_{DC}/G_{AC}]^2$ the RIN is increased by a factor of 400 corresponding to 26 dB. Below is shown Figs. 3–5 from [1] with the corrected RIN values. The corrected RIN measurements can also be found in [2].

The authors regret the error, but emphasize that it does not affect any of the conclusions presented in [1].

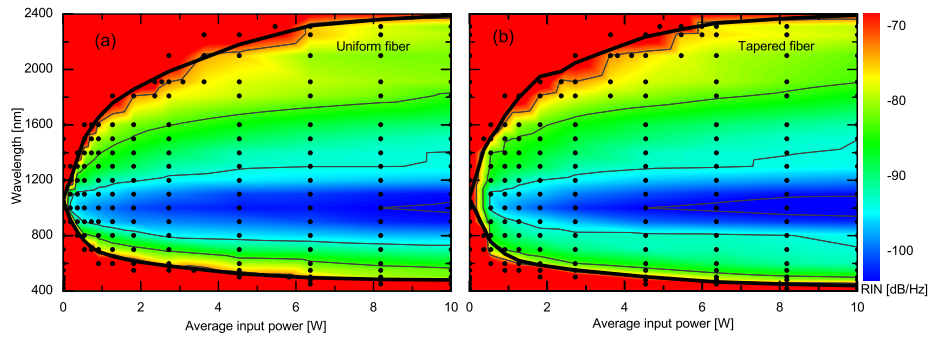


Fig. 3. RIN vs. input power and wavelength in (a) the uniform fiber and (b) the tapered fiber. The thick black line shows the spectral edges. The dots show the measurement points.

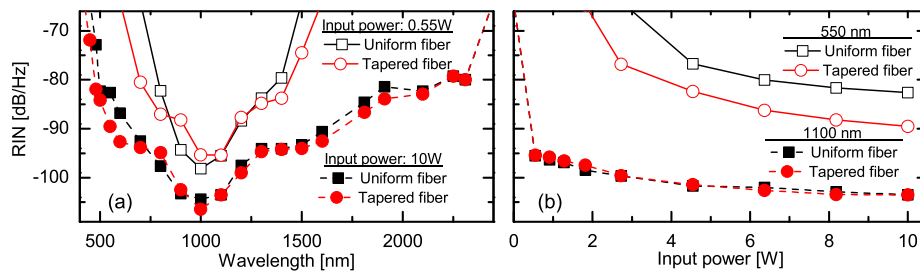


Fig. 4. RIN of the uniform (black squares) and the tapered fiber (red circles) (a) vs. wavelength at fixed input power of 0.55 W (open symbols) and 10 W (solid symbols) and (b) vs. input power at fixed wavelength of 550 nm (open symbols) and 1100 nm (solid symbols).

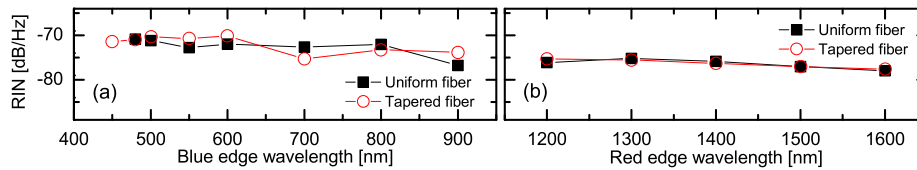


Fig. 5. RIN at the spectral (a) blue and (b) red edge of the uniform and tapered fiber, respectively, as a function of wavelength.