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Sample manuscript for SCPMA

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An abstract (100-200 words) is a summary of the content of the manuscript. It should briefly describe the research purpose, method, result and conclusion. The extremely professional terms, special signals, figures, tables, chemical structural formula, and equations should be avoided here, and citation of references is not allowed. In this sample article we provide instructions on how to prepare and submit your paper to *Science China Physics, Mechanics & Astronomy*, a journal published by Science China Press. The Science China Press staff appreciates your effort to follow our style when preparing your manuscript.

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Being the most important part of an article, the introduction introduces the relevant research background and the progress in 2 or 3 years, with references cited in numerical order, then presents the problem to be solved in this article, and finally briefly describes the method adopted in this work. Before the end, the aim of the research should be mentioned. Subtitle is forbidden in this part, and introduction of the article structure is considered unnecessary.

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When selecting a file mode, for print choose CMYK (cyan, magenta, yellow, black) and for color online choose RGB (red, green, blue).

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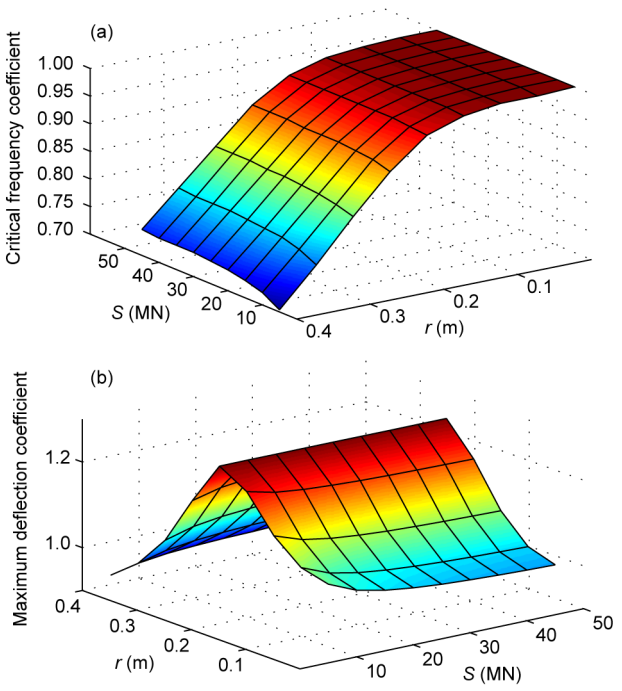

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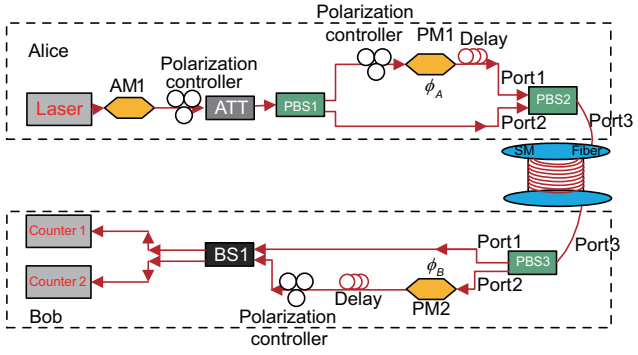

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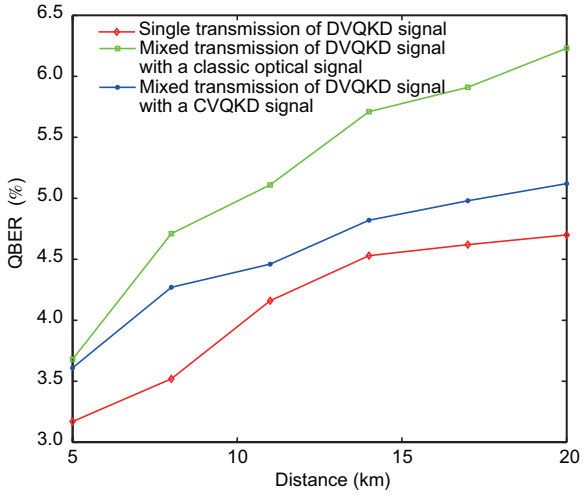

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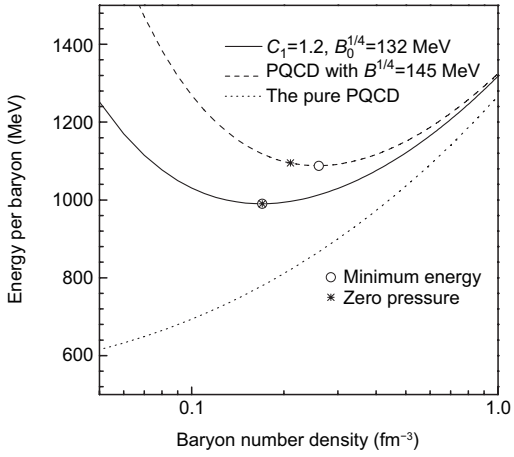

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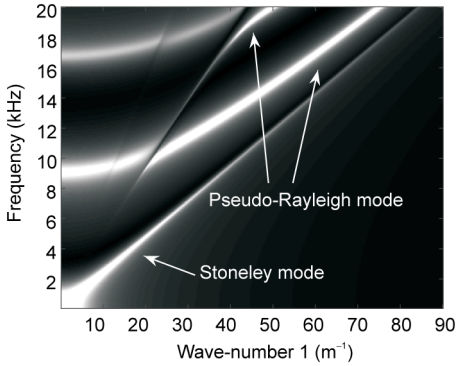

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Table 1 FPGA resource ultilization

FPGA device	ArriaV 5AGXFB3H4F35C4N
Logic utilization (in ALMs)	83845/136880 (61%)
Total registers	83534
Total pins	41/656 (6%)
Total block memory bits	2350280/17674240 (13%)
Total PLLs	2/36 (6%)[1)]

[1)] spacecraft will hit earth on way back since $r_p < r_{earth}$

6.3 Multimedia submissions

Multimedia files can be included in the online version of published papers. All such files are peer reviewed. When published, these files can be viewed by clicking on a link from the figure caption, provided that the reader has a video player installed, such as Windows Media PlayerTM, Quick Time PlayerTM, or RealOne PlayerTM. Please note the following important information when preparing your manuscript:

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7 Equations

Equations need to be editable so we recommend that you create them with Mathtype. An equation is numerically numbered (Arabic numeral), and has the number put on its right side, as eqs. (1)-(3). Don't use the method "begin{eqnarray}".

$$\mathrm{d}s^2 = -f(r)\mathrm{d}t^2 + f^{-1}(r)\mathrm{d}r^2 + r^2\mathrm{d}\tilde{x}_i^2, \tag{1}$$

$$\begin{aligned}\mathcal{L}_{\mathrm{K}} =& \left(\frac{\chi}{f_\chi}\right)^2 D_\mu K^\dagger D^\mu K - \left(\frac{\chi}{f_\chi}\right)^3 m_K^2 K^\dagger K \\ &- \frac{2\mathrm{i}N_c}{5f_\pi^2} B^\mu \left(D_\mu K^\dagger K - K^\dagger D_\mu K\right),\end{aligned} \tag{2}$$

$$\begin{aligned}&\text{(i)} : \mathrm{i}f_\pi^2 g_{\mu\nu}\delta^{ab}\left(1 - \frac{2}{3}\left\langle \boldsymbol{\phi}_\pi^2 \right\rangle\right), \\ &\text{(ii)} : -\mathrm{i}f_\pi^2 \tfrac{p_\mu p_\nu}{p^2}\delta^{ab}\left(1 - \frac{2}{3}\left\langle \boldsymbol{\phi}_\pi^2 \right\rangle\right).\end{aligned} \tag{3}$$

When a numbered equation has more than one part and that (those) part(s) consecutively follow, then they are indicated as follows:

$$f(r) = -\frac{r^2}{4\alpha}\left[1 - \sqrt{1 + \frac{8\alpha}{l^2} - \frac{16\alpha M}{r^3} + \frac{8\alpha Q^2}{r^4}}\right], \tag{4}$$

$$\mathrm{d}s^2 \to \frac{r^2}{\ell^2}(-\mathrm{d}t^2 + \mathrm{d}x_i^2) + \frac{\ell^2}{r^2}\mathrm{d}r^2, \tag{5a}$$

$$\ell^2 = \frac{l^2(1 + \sqrt{1 + 8\alpha/l^2})}{2}. \tag{5b}$$

$$\mathrm{d}s^2 = \frac{l^2}{z^2}[-H(z)\mathrm{d}t^2 + H^{-1}(z)\mathrm{d}z^2 + \mathrm{d}x_i^2], \tag{5c}$$

Table 2 Comparison with related works

	This work	Ref. [1]	Ref. [2]	Ref. [12,13]
Image	8-bit mono	8-bit mono	8-bit color	8-bit mono
Algorithm	MRID based	LBP based	Color tracking	HOG-LBP
Resolution	750 × 480	128×128	512×512	N/A
Environment setting	Outdoor/indoor, Complex sceneries, Changing illumination, Abrupt rotation	Indoor, Certain sceneries, Changing illumination	Indoor, Certain sceneries, Changing illumination	Outdoor/indoor, Certain sceneries, Changing illumination
Robustness	Best	Common	Worst	Common
Tracking Method	Learning	No learning	No learning	Learning
Frequency (MHz)	100	50	151.2	N/A
Processing speed (fps)	1200	1000	2000	N/A

If, however, they do not follow consecutively, primes are used:

$$f(r) = -\frac{r^2}{4\alpha}\left[1 - \sqrt{1 + \frac{8\alpha}{l^2} - \frac{16\alpha M}{r^3} + \frac{8\alpha Q^2}{r^4}}\right], \tag{6}$$

$$\mathrm{d}s^2 \to \frac{r^2}{\ell^2}(-\mathrm{d}t^2 + \mathrm{d}x_i^2) + \frac{\ell^2}{r^2}\mathrm{d}r^2, \tag{7a}$$

$$\ell^2 = \frac{l^2(1 + \sqrt{1 + 8\alpha/l^2})}{2}. \tag{7b}$$

$$\mathrm{d}s^2 = \frac{l^2}{z^2}[-H(z)\mathrm{d}t^2 + H^{-1}(z)\mathrm{d}z^2 + \mathrm{d}x_i^2], \tag{7'}$$

$$H(z) = 1/4\alpha\left[\sqrt{1 + 8\alpha - 16\alpha M z^3} - 1\right]. \tag{7''}$$

8 References

1. For an author's name, full spelling of family name appears after abbreviation of given name, and it should include the full list of authors.

2. For correct abbreviations of journal titles, refer to ISO, e.g., Sci. Bull for Science Bulletin, Sci. China-Phys. Mech. Astron. for *SCIENCE CHINA Physics, Mechanics & Astronomy*.

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8. Reference citations in the text should be identified by numbers in square brackets. Some examples:

(i) Negotiation research spans many disciplines [1].

(ii) This result was later contradicted by Becker and Seligman [2].

(iii) This effect has been widely studied [3-7].

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Conflict of interest The authors declare that they have no conflict of interest.

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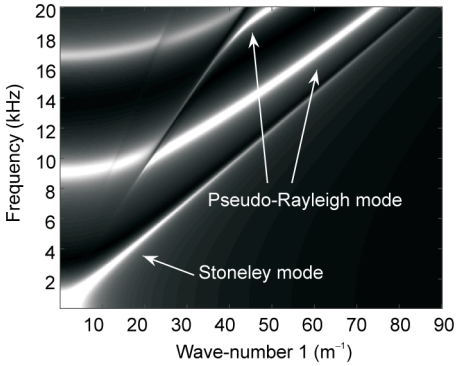

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Appendix

The appendix section is placed after the listing of references. Appendices must have a Level One heading as illustrated below. They do not follow the sequential heading numbering given in the rest of the paper. If there is only one appendix, then the heading is set as follows:

If there is more than one appendix, the headings are set as:

A1 Description

A2 Description

Subheadings in an Appendix are labeled 1, 2, etc. In appendixes, the equation's numbering starts over as eqs. (a1)-(a3).

Figure a1 This is a figure in Appendix. Table a1 This is a table in Appendix.

$$R_{\mu\nu} - \frac{1}{2}Rg_{\mu\nu} = 8\pi \mathrm{G}\langle T_{\mu\nu}\rangle, \tag{a1}$$

$$\mathrm{d}s^2 = -f(r)\mathrm{d}t^2 + f^{-1}(r)\mathrm{d}r^2 + r^2\mathrm{d}\tilde{x}_i^2, \tag{a2}$$

$$\mathrm{d}s^2 = -f(r)\mathrm{d}t^2 + f^{-1}(r)\mathrm{d}r^2 + r^2\mathrm{d}\tilde{x}_i^2, \tag{a3}$$

When a numbered equation has more than one part and that (those) part(s) consecutively follow, then they are indicated as follows:

$$f(r) = -\frac{r^2}{4\alpha}\left[1 - \sqrt{1 + \frac{8\alpha}{l^2} - \frac{16\alpha M}{r^3} + \frac{8\alpha Q^2}{r^4}}\right], \tag{a4a}$$

$$\mathrm{d}s^2 \to \frac{r^2}{\ell^2}(-\mathrm{d}t^2 + \mathrm{d}x_i^2) + \frac{\ell^2}{r^2}\mathrm{d}r^2, \tag{a4b}$$

$$\ell^2 = \frac{l^2(1 + \sqrt{1 + 8\alpha/l^2})}{2}. \tag{a4c}$$

$$\mathrm{d}s^2 = \frac{l^2}{z^2}[-H(z)\mathrm{d}t^2 + H^{-1}(z)\mathrm{d}z^2 + \mathrm{d}x_i^2], \tag{a4d}$$

Table A3 Some typical quantities calculated in different models with several particle numbers N, where $H_{\rm cri}$ denotes the Hamiltonian at the critical point of the U(5)-O(6) transition. Some typical quantities calculated in different models with several particle numbers N, where $H_{\rm cri}$ denotes the Hamiltonian at the critical point of the U(5)-O(6) transition

	$H_{\rm cri}$		H_A		β^4	E(5)
	N=16	N=1024	N=16	N=1024		
E_{4_1}/E_{2_1}	2.13	2.10	1.95	2.19	2.09	2.20
E_{0_2}/E_{2_1}	2.80	2.46	2.68	3.02	2.39	3.03
$\frac{B(E2;\,4_1\to2_1)}{B(E2;\,2_1\to0_1)}$	1.66	1.81	1.61	1.67	1.82	1.68
$\frac{B(E2;\,0_2\to2_1)}{B(E1;\,2_1\to0_1)}$	0.98	1.35	0.64	0.86	1.41	0.86