

Featured Videos

Guide for authors and editors

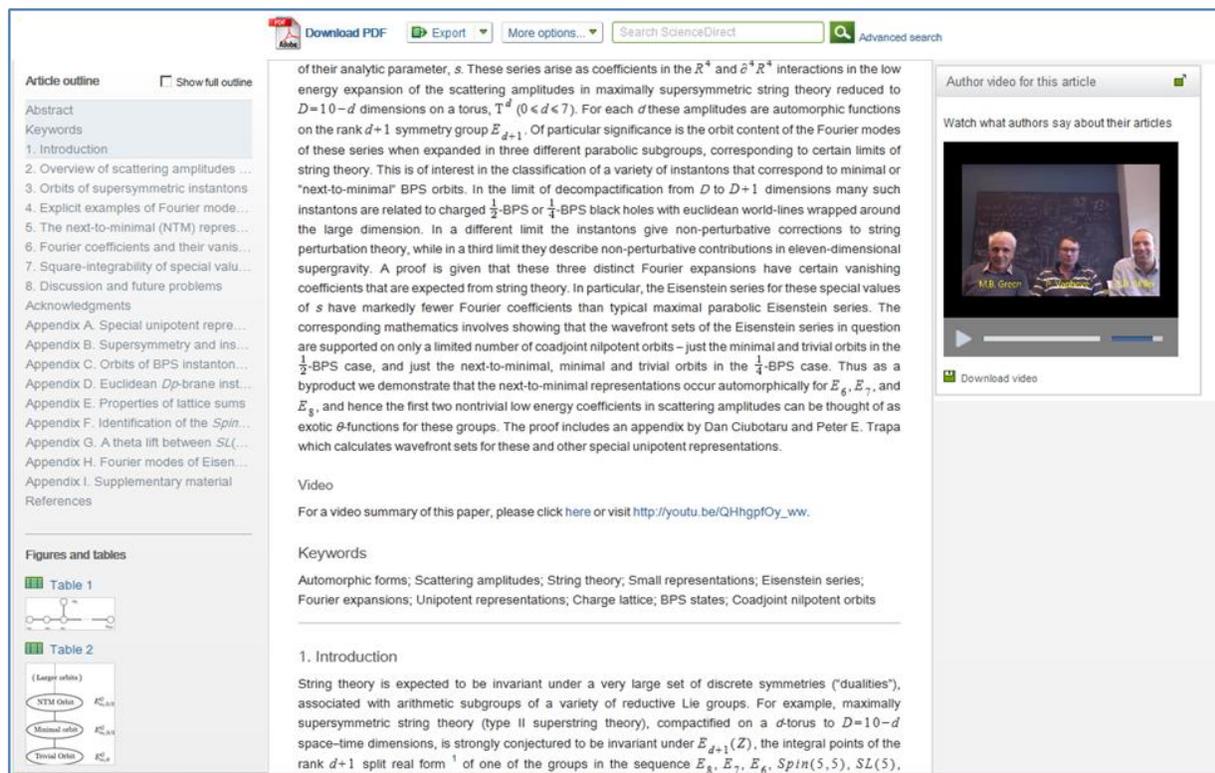
April 15th 2014

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1. What is a Featured Video?

A featured video is a type of video in which authors/editors briefly discuss and explain a paper. Featured videos appear on ScienceDirect, next to the published articles in the right-hand side column (as it is shown in the screenshot below). One featured video per article is possible.



The screenshot displays a ScienceDirect article page. On the left, there is an 'Article outline' section with a 'Show full outline' checkbox. Below it are sections for 'Abstract', 'Keywords', and a numbered list of sections from 1 to 9, including 'Introduction', 'Overview of scattering amplitudes...', 'Orbits of supersymmetric instantons...', 'Explicit examples of Fourier mode...', 'The next-to-minimal (NTM) repres...', 'Fourier coefficients and their vanis...', 'Square-integrability of special valu...', 'Discussion and future problems', 'Acknowledgments', and various 'Appendix' sections. Below the outline is a 'Figures and tables' section with 'Table 1' and 'Table 2'. 'Table 2' includes a diagram of 'Large orbits' with sub-categories: 'NTM Orbit', 'Minimal orbit', and 'Trivial Orbit', each associated with a mathematical expression like $E_{d,3,1}^*$.

The main content area contains the start of an abstract: 'of their analytic parameter, s . These series arise as coefficients in the R^+ and $\hat{\sigma}^+ R^+$ interactions in the low energy expansion of the scattering amplitudes in maximally supersymmetric string theory reduced to $D=10-d$ dimensions on a torus, T^d ($0 < d < 7$). For each d these amplitudes are automorphic functions on the rank $d+1$ symmetry group E_{d+1} . Of particular significance is the orbit content of the Fourier modes of these series when expanded in three different parabolic subgroups, corresponding to certain limits of string theory. This is of interest in the classification of a variety of instantons that correspond to minimal or "next-to-minimal" BPS orbits. In the limit of decompactification from D to $D+1$ dimensions many such instantons are related to charged $\frac{1}{2}$ -BPS or $\frac{1}{4}$ -BPS black holes with euclidean world-lines wrapped around the large dimension. In a different limit the instantons give non-perturbative corrections to string perturbation theory, while in a third limit they describe non-perturbative contributions in eleven-dimensional supergravity. A proof is given that these three distinct Fourier expansions have certain vanishing coefficients that are expected from string theory. In particular, the Eisenstein series for these special values of s have markedly fewer Fourier coefficients than typical maximal parabolic Eisenstein series. The corresponding mathematics involves showing that the wavefront sets of the Eisenstein series in question are supported on only a limited number of coadjoint nilpotent orbits – just the minimal and trivial orbits in the $\frac{1}{2}$ -BPS case, and just the next-to-minimal, minimal and trivial orbits in the $\frac{1}{4}$ -BPS case. Thus as a byproduct we demonstrate that the next-to-minimal representations occur automorphically for E_6 , E_7 , and E_8 , and hence the first two nontrivial low energy coefficients in scattering amplitudes can be thought of as exotic θ -functions for these groups. The proof includes an appendix by Dan Ciubotaru and Peter E. Trapea which calculates wavefront sets for these and other special unipotent representations.

Below the abstract is a 'Video' section with a link: 'For an audio summary of this paper, please click here or visit http://youtu.be/QHhgpOy_wv.'

The 'Keywords' section lists: 'Automorphic forms; Scattering amplitudes; String theory; Small representations; Eisenstein series; Fourier expansions; Unipotent representations; Charge lattice; BPS states; Coadjoint nilpotent orbits'

The '1. Introduction' section begins: 'String theory is expected to be invariant under a very large set of discrete symmetries ("dualities"), associated with arithmetic subgroups of a variety of reductive Lie groups. For example, maximally supersymmetric string theory (type II superstring theory), compactified on a d -torus to $D=10-d$ space-time dimensions, is strongly conjectured to be invariant under $E_{d+1}(Z)$, the integral points of the rank $d+1$ split real form 1 of one of the groups in the sequence $E_6, E_7, E_8, Spin(5,5), SL(5)$.

On the right side of the page, there is an 'Author video for this article' section. It contains a video player with a play button and a 'Download video' link. The video thumbnail shows three men in a studio setting, with names 'M.B. Green', 'J. Polchinski', and 'C. Vasiliev' overlaid on the image.

Article example: www.sciencedirect.com/science/article/pii/S0022314X13002424

Please note that we support MP4 video format only. Recommended video dimensions: 640 x 480 at a maximum of 30 frames / second. Recommended file size is up to 50 MB.

Article-examples that feature author videos:

<http://www.sciencedirect.com/science/article/pii/S027795360900687X>

<http://www.sciencedirect.com/science/article/pii/S0277953610001784>

<http://www.sciencedirect.com/science/article/pii/S0277953610008312>

2. Tips for creating featured videos

- If you decide to use an interview setting, the person doing the interview should be someone other than the one doing the filming. The person being interviewed doesn't have to look straight at the camera; a slight angle often works better.

- Choose a spot that is quiet and free from distraction. Have a place setup with your video recording gear ready to go. A webcam is recommended but you can also use digital cameras and cam recorders.
- For sound recording, you can use a USB microphone, built-in microphone available with your laptop or a web cam's microphone. You can also use a professional mic and mixing board system if you feel inclined. Make sure the room doesn't have too many echoes or too much reverberation when you do your recording.
- You may decide to use different techniques, such as animations to explain your article. You can also make scene shots of your surroundings like your institute, building, environment, etc. and embed them in the videos.
- Make sure the place is tidy up and there is enough light available to have a good quality recording. Use enough light during recording, but avoid any bright light coming from behind the person being interviewed (windows, sunlight). A light source coming from behind the camera gives the best results.
- Anyone speaking should not stand too close to walls to avoid shadow and possible echo effects.
- Speak clearly and loudly enough for recording. Use of a microphone is recommended, but don't place it too close to your mouth: breathing noises should be avoided.
- Clearly state the names of the spokespersons and provide legends, titles etc.
- Edit your video to improve the recording. You can make use of software such as Adobe Premiere Elements, Windows Movie Maker, iMovie, Final Cut Pro, Cinelerra and others.

3. File size optimization

File size and quality; the recommended file size for your submission is maximum 50 MB, otherwise we cannot guarantee performance.

To control your file size you can adjust the following settings:

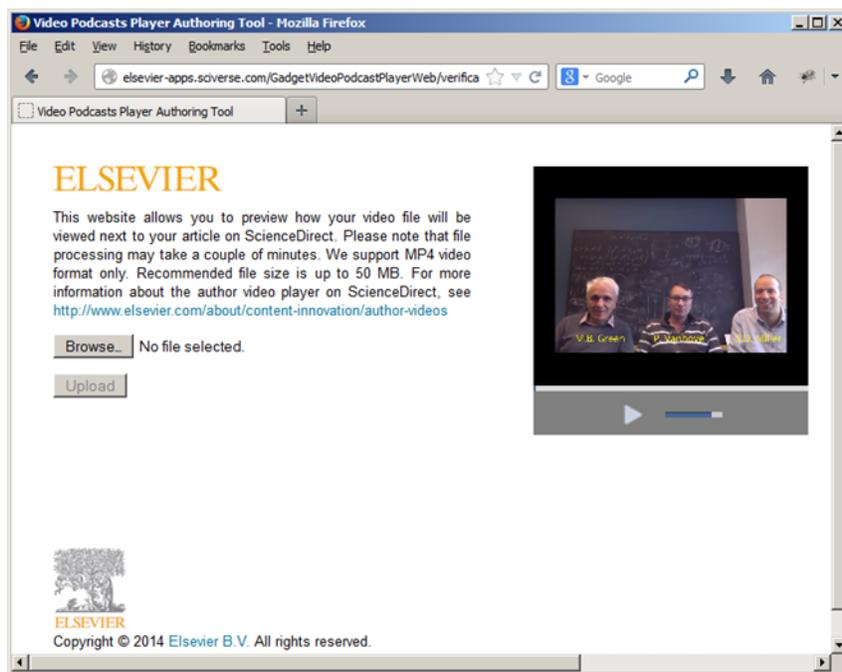
- a) *Frames per second (FPS)*; the standard for FPS is 29.97 but we can still have average quality videos for a FPS of 25. The higher the FPS, the bigger the file size will be for the same video length. We recommend **25 FPS for your videos submission**.
- b) *Video Bitrate*; the bitrate is a measurement of the number of bits that are transmitted over a set length of time. Your overall bitrate is a combination of your video, audio stream & metadata in your file with the majority coming from your video stream. The higher the bit rate the better the quality and the bigger it will be. $File\ size = bitrate * duration$ (if bitrate is constant). You can adjust this setting to get the desired file size at the right quality level. **The recommended file size is 50MB**.
- c) *Resolution*; this is the number of pixels present in the image of the video and this determines whether your video is standard definition or high definition. The easiest change to optimize your file size can come from lowering the number of pixels displayed by simply lowering the resolution of the file. Most videos are filmed in either 16:9 or 4:3, changing this ratio can lead to a squishing or stretching effect that is unsightly. For better quality to bit ratio, also remember to keep your resolution in a value evenly divisible by 16, but do not alter a resolution to make it a multiple of 16 unless you over – crop, which will cause you to lost part of the image. Under – cropping or adding a black border around your image will decrease encoding efficiency. Scaling will just degrade the image. **We recommend 640 x 480 resolution**
- d) *Video codec*; A **video codec** is a device or software that enables compression or decompression of digital video. Recommended encoding options:
 - Video Codec: MPEG4
 - H.264 Baseline Profile Level 3.0 video
 - AAC-LC audio, up to 48 kHz

4. Naming and validating video files

Once you have recorded your video, you will have to save it as an .mp4 file - this can be done with any of the software mentioned above. Please make sure that the video is named properly; a standard approach would be to use the author's name. Only use letters, 0-9 numbers and the underscore characters in the file names; other special character may cause issues with submission. Also do not use spaces in the file names as again this can create issues when the files are processed. The file extension must be .mp4 and must be lower case.

Please validate whether your .mp4 file is suitable to be used by the 'featured video' player available on ScienceDirect prior to submission. This has to be done via the web-based validation tool available at:<http://elsevier-apps.sciverse.com/GadgetVideoPodcastPlayerWeb/verification>. Please note that video processing may take a few minutes.

If the validation test successfully passed, the tool will display your video exactly in the same way as it will appear on ScienceDirect as it is shown below. If you get error messages please amend your video until it is suitable for submission. The following free online converter allows video files to be converted to the correct MP4 video format: <http://video.online-convert.com/convert-to-mp4>.



Example of a successfully passed validation test

5. Video tagging

In addition, it is possible and advisable to add information that describes the MP4 file, a process named tagging. Tags usually include information about the authors, video title, or genre for movie file.

There are a number of other tags available for use which can be accessed and updated through various applications.

6. Submission

There are two ways you can submit your video, which depends of your video file size.

If .mp4 file is less than 10MB, it can be sent by e-mail to the Journal Manager. If the file is bigger than 10MB it should be submitted via a file sharing service such as <https://www.dropbox.com/tour> or <https://www.hightail.com/>. The link for the file download should be communicated to the Journal Manager via email.