

Announcing a workshop with Charles Poynton

Thu. Nov. 26, 2009, 9:00–17:30
Technicolor Creative Services
DI Suite
49 Ontario St., Toronto



Linear, log *RGB*, log neg, and CPD: What's in your DPX file?

DI houses and VFX houses are faced with a proliferation of acquisition formats including log *RGB* ("quasilog," such as FilmStream, Panalog, and S-log), log neg (Cineon Printing Density), and "Rec. 709" in various forms (HyperGamma, Cine Gamma etc.). In addition, DI houses and VFX houses are presented with many formats described by DITs as "linear" but for which an 18% grey card does *not* approximate a signal code of 18 on a scale of 0 to 100! Any of these formats can appear in DPX files, but there is rarely sufficient metadata to identify the colour image encoding.

In this 1-day workshop, Charles Poynton will introduce the perceptual and mathematical properties of linear-light, power function, and logarithmic encodings. He will detail the parameters of these coding schemes:

- Power function (gamma) encoded BT.709, sRGB, HyperGamma, "Film Rec," and *Cine Gamma*, including discussion of KNEE and SLOPE controls;
- Log *RGB* (quasilog/pseudolog) encodings: FilmStream, ARRI log F, Panalog, Sony-log (S-log);
- Log neg encodings: Cineon printing density (CPD/DPX), ARRI log C.

He will describe the trade-offs involved in choosing encodings suitable for digital cinema and HD projects; he'll review the bit depth requirements for high quality digital imagery represented in various forms. He'll detail the 1D and 3D LUTs by which encodings are converted. He'll explain the origins of gamma values 1.8, 2.0, 2.2, 2.4, and 2.6, and explain where each is potentially appropriate at various stages of the DI pipeline.

Who Should Attend: The attendee should be very familiar with digital cinema acquisition, and should be quite comfortable with mathematics, especially $y = mx + b$. The workshop will be suitable for people in positions such as these:

- Post-production and visual effects supervisors, and post/VFX engineers
- Digital cinema and CGI/VFX software developers
- Advanced-level Digital Imaging Technicians (DITs)
- Film scanner and film recorder engineers

Registration: CAD 651, including GST, including refreshments. Lunch at a neighbourhood restaurant will be provided; you will have a chance to socialize with your colleagues. Detailed handout notes – some of which form portions of Mr. Poynton's forthcoming book – will be provided. To enroll, e-mail Charles Poynton, charles@poynton.com, or telephone +1 416 535 7187. Please register early; the number of places is limited.

Charles Poynton specializes in the physics, mathematics, and engineering of digital colour imaging systems, including digital HDTV and digital cinema (D-cinema). He is the author of *Digital Video and HDTV Algorithms and Interfaces*, and a Fellow of both the Society of Motion Picture and Television Engineers (SMPTE) and the BKSTS. He was the founding chairman of the SMPTE committee that developed the DPX standard.