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**Robert M Spann\*** (bobspann@gmail.com). *Implementing Multiple Compositional and Color Constraints in Algorithmic Art.*

There are direct analogs between the compositional rules and color theory principles that artists use and the mathematical and statistical properties of images. For example, the compositional principle that an image be balanced horizontally and vertically is equivalent to stating that the first horizontal and vertical geometric moments (or center of mass) are zero. Similarly, the compositional principle that an image have a focal point can be represented by the restriction that the standard deviation of the pixel values is high at certain parts of the image. Such composition rules are often used to evaluate algorithmically generated images. Alternatively, one could start by specifying the compositional constraints one wants the image to satisfy. These composition constraints can be written as equations which the pixel values of the image must satisfy. I use optimization techniques to produce images that simultaneously satisfy several pre-specified compositional constraints. (Received September 17, 2013)