

Michigan Math Club

Thursday at 4pm in the Nesbitt Room

Free Pizza and Pop

Approximating π for approximate π day

David Speyer

This talk will feature identities like

$$\pi = \frac{3}{\cos\left(\frac{\pi}{12}\right) \cos\left(\frac{\pi}{24}\right) \cos\left(\frac{\pi}{48}\right) \cos\left(\frac{\pi}{96}\right) \dots}$$

$$\pi = 12 \tan^{-1}\left(\frac{1}{7}\right) + 8 \tan^{-1}\left(\frac{1}{8}\right) + 8 \tan^{-1}\left(\frac{1}{18}\right)$$

$$\pi = \sum_{n=0}^{\infty} \frac{(-1)^n}{4^n} \left(\frac{2}{4n+1} + \frac{2}{4n+2} + \frac{1}{4n+3} \right)$$

and explain how they have been used to compute π .

