Extrapolating to T_c

$$m = 1 - 2x^6 - 12x^{10} + 14x^{12} \cdots - 1650000819068x^{54} \ldots$$

- Separated by *singularity*, $m \sim (T_c - T)^\beta \sim (x_c - x)^\beta$: how to capture branch cut singularity?
- $\log(m(x)) \sim \beta \log(x_c - x)$;
  $\mathrm{d}\log(m)/\mathrm{d}x \sim \beta/(x - x_c)$
  Simple pole! Put in denominator.

DLog Padé method

- $\mathrm{d}\log(m)/\mathrm{d}x = -6x^2 - 60x^4 + 72x^5 - 630x^6 \ldots$
- Rewrite as ratio of polynomials (match to x^6)
$$\mathrm{d}\log(m)/\mathrm{d}x \approx \frac{-6x^2 - 5x^3/2}{1 + 5x/12 - 10x^2 + 47x^3/6}$$
- Factor denominator
$$\beta/(x - x_c) \approx \frac{-6x^2 - 5x^3/2}{(x - 1.129)(x - 0.4177)(x + 0.27)}$$
- $x_c = \exp(-2J/k_B T_c) \approx 0.4142$? ($T_c$ 1.6% off)
- $\beta \approx \frac{-6x_c^2 - 5x_c^3/2}{(x_c - 1.129)(x_c + 0.27)} \approx 0.3203$
- Best is 0.32641 (Conformal field theory).
- My plots 9-10 DLog Padé, $\cdots x^9 / \cdots x^{10}$