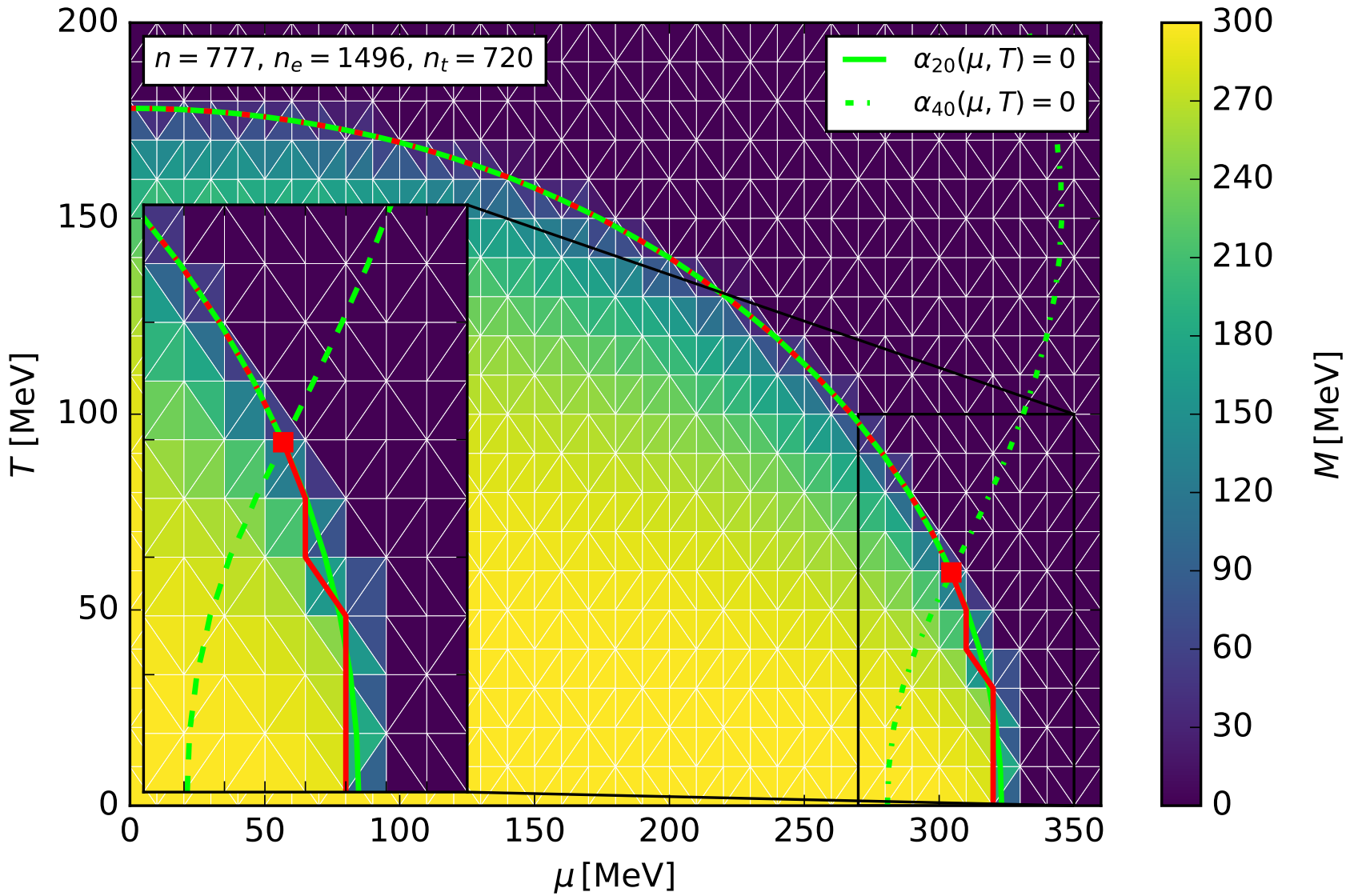
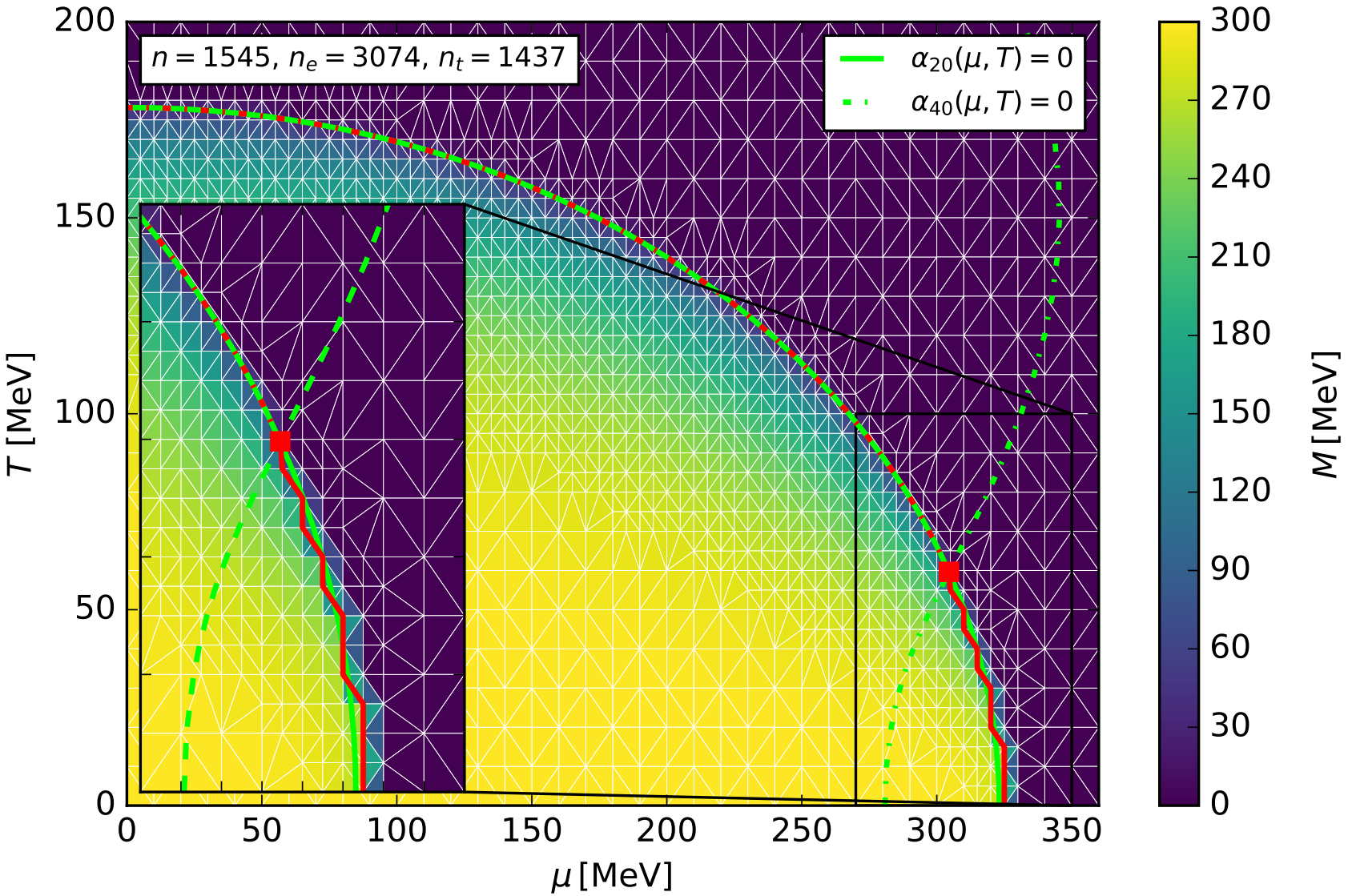
Homogeneous RG consistent MF PD

RP*, λ_k^{exp}, $\Lambda' = 2\,\mathrm{GeV}$, $\Lambda = 5\,\mathrm{GeV}$, $f_\pi^{\mathrm{r}} = 88\,\mathrm{MeV}$, $M_\psi = 300\,\mathrm{MeV}$, $m_\sigma^{\mathrm{p}} = 550\,\mathrm{MeV}$



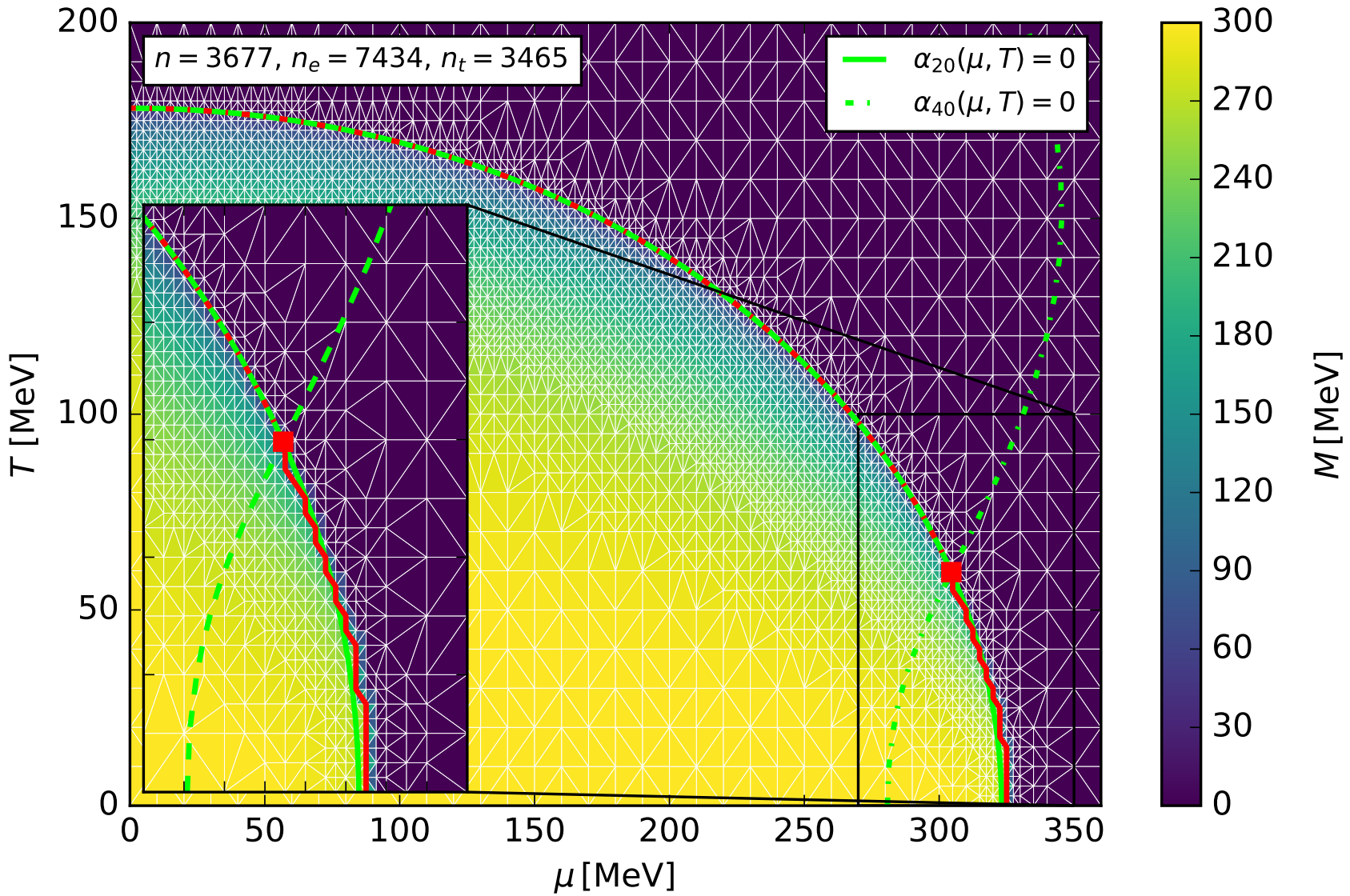
Homogeneous RG consistent MF PD

RP*, λ_k^{exp}, $\Lambda' = 2\,\mathrm{GeV}$, $\Lambda = 5\,\mathrm{GeV}$, $f_\pi^{\mathrm{r}} = 88\,\mathrm{MeV}$, $M_\psi = 300\,\mathrm{MeV}$, $m_\sigma^{\mathrm{p}} = 550\,\mathrm{MeV}$



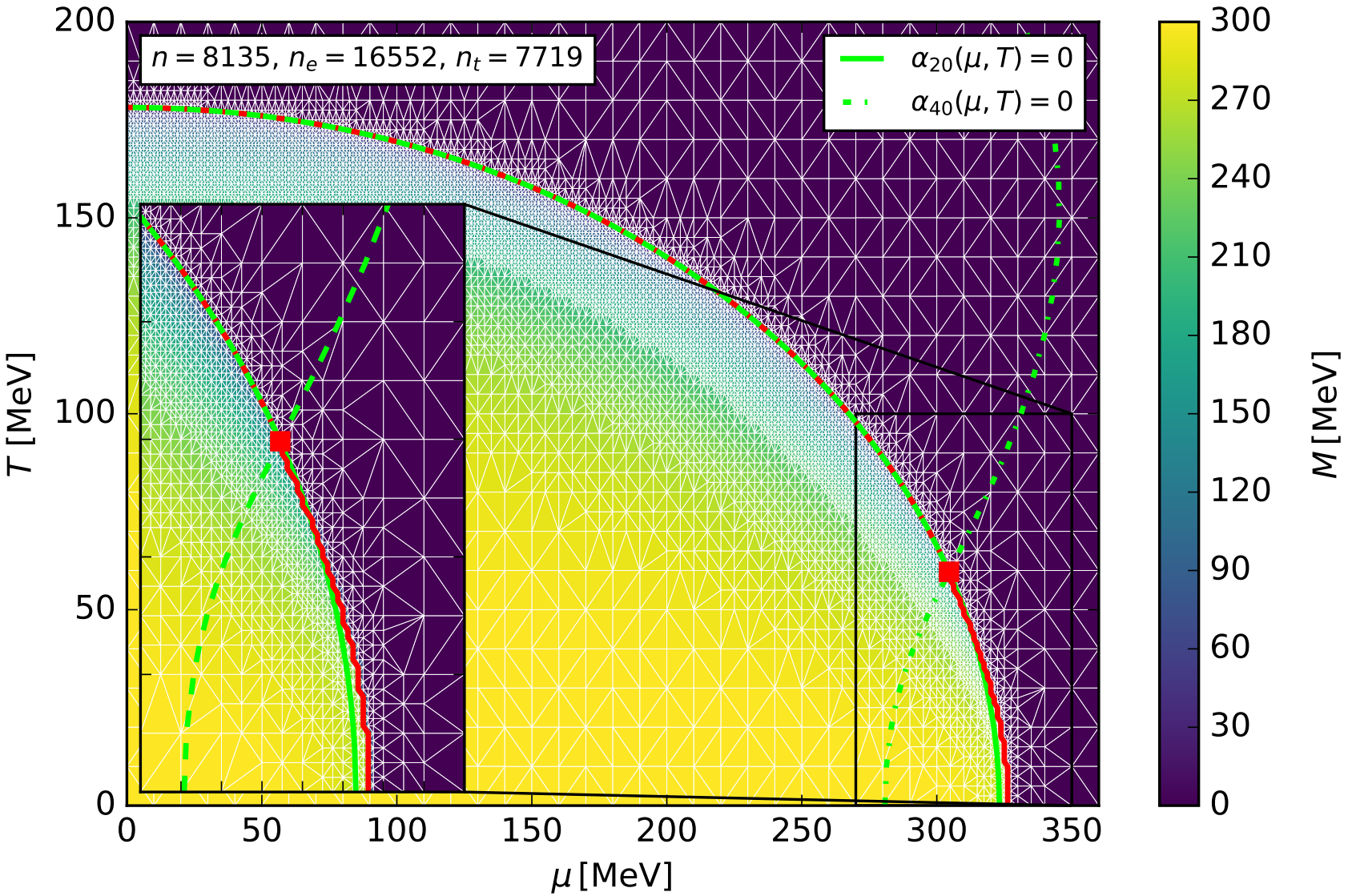
Homogeneous RG consistent MF PD

RP*, λ_k^{exp}, $\Lambda' = 2\,\mathrm{GeV}$, $\Lambda = 5\,\mathrm{GeV}$, $f_\pi^{\mathrm{r}} = 88\,\mathrm{MeV}$, $M_\psi = 300\,\mathrm{MeV}$, $m_\sigma^{\mathrm{p}} = 550\,\mathrm{MeV}$



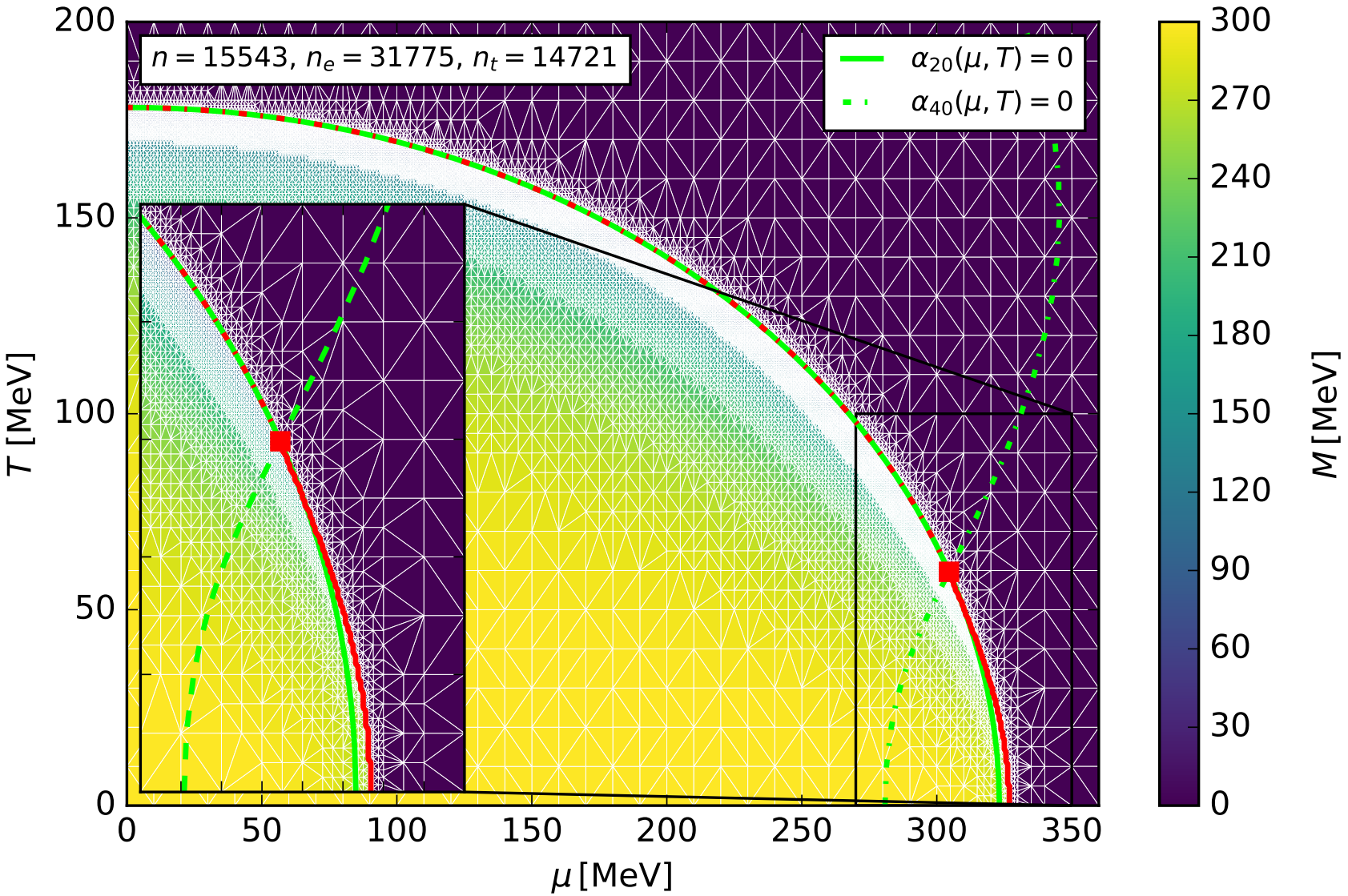
Homogeneous RG consistent MF PD

RP*, λ_k^{exp}, $\Lambda' = 2\,\mathrm{GeV}$, $\Lambda = 5\,\mathrm{GeV}$, $f_\pi^{\mathrm{r}} = 88\,\mathrm{MeV}$, $M_\psi = 300\,\mathrm{MeV}$, $m_\sigma^{\mathrm{p}} = 550\,\mathrm{MeV}$



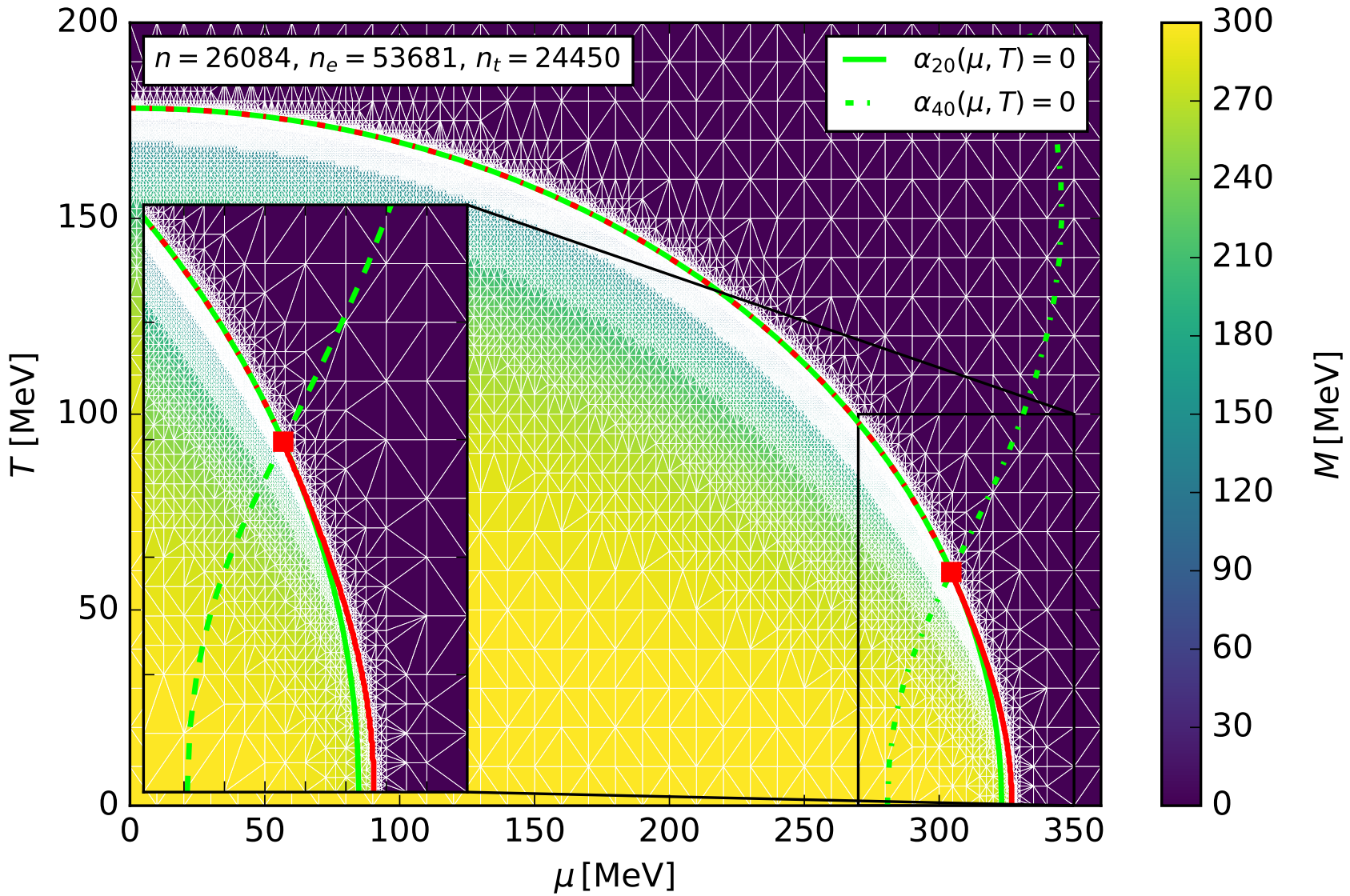
Homogeneous RG consistent MF PD

RP*, λ_k^{exp}, $\Lambda' = 2\,\mathrm{GeV}$, $\Lambda = 5\,\mathrm{GeV}$, $f_\pi^{\mathrm{r}} = 88\,\mathrm{MeV}$, $M_\psi = 300\,\mathrm{MeV}$, $m_\sigma^{\mathrm{p}} = 550\,\mathrm{MeV}$



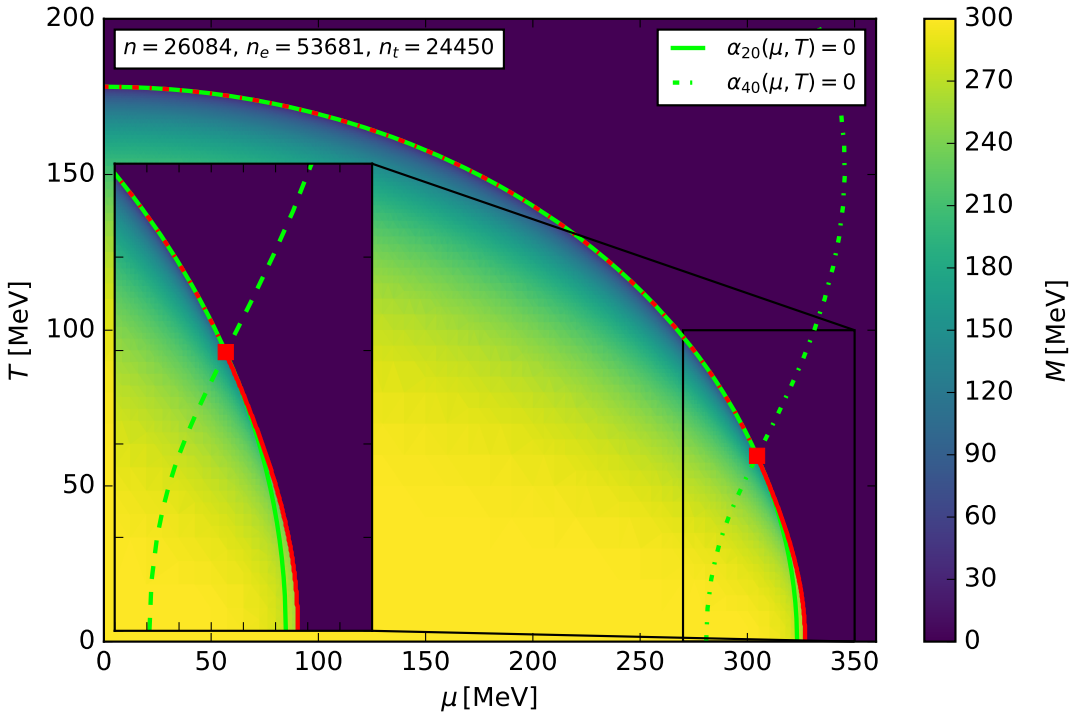
Homogeneous RG consistent MF PD

RP*, λ_k^{exp}, $\Lambda' = 2\,\mathrm{GeV}$, $\Lambda = 5\,\mathrm{GeV}$, $f_\pi^{\mathrm{r}} = 88\,\mathrm{MeV}$, $M_\psi = 300\,\mathrm{MeV}$, $m_\sigma^{\mathrm{p}} = 550\,\mathrm{MeV}$



Homogeneous (CDW) RG consistent MF PD

RP*, λ_k^{exp}, $\Lambda' = 2\,\mathrm{GeV}$, $\Lambda = 5\,\mathrm{GeV}$, $f_\pi^{\mathrm{r}} = 88\,\mathrm{MeV}$, $M_\psi = 300\,\mathrm{MeV}$, $m_\sigma^{\mathrm{p}} = 550\,\mathrm{MeV}$

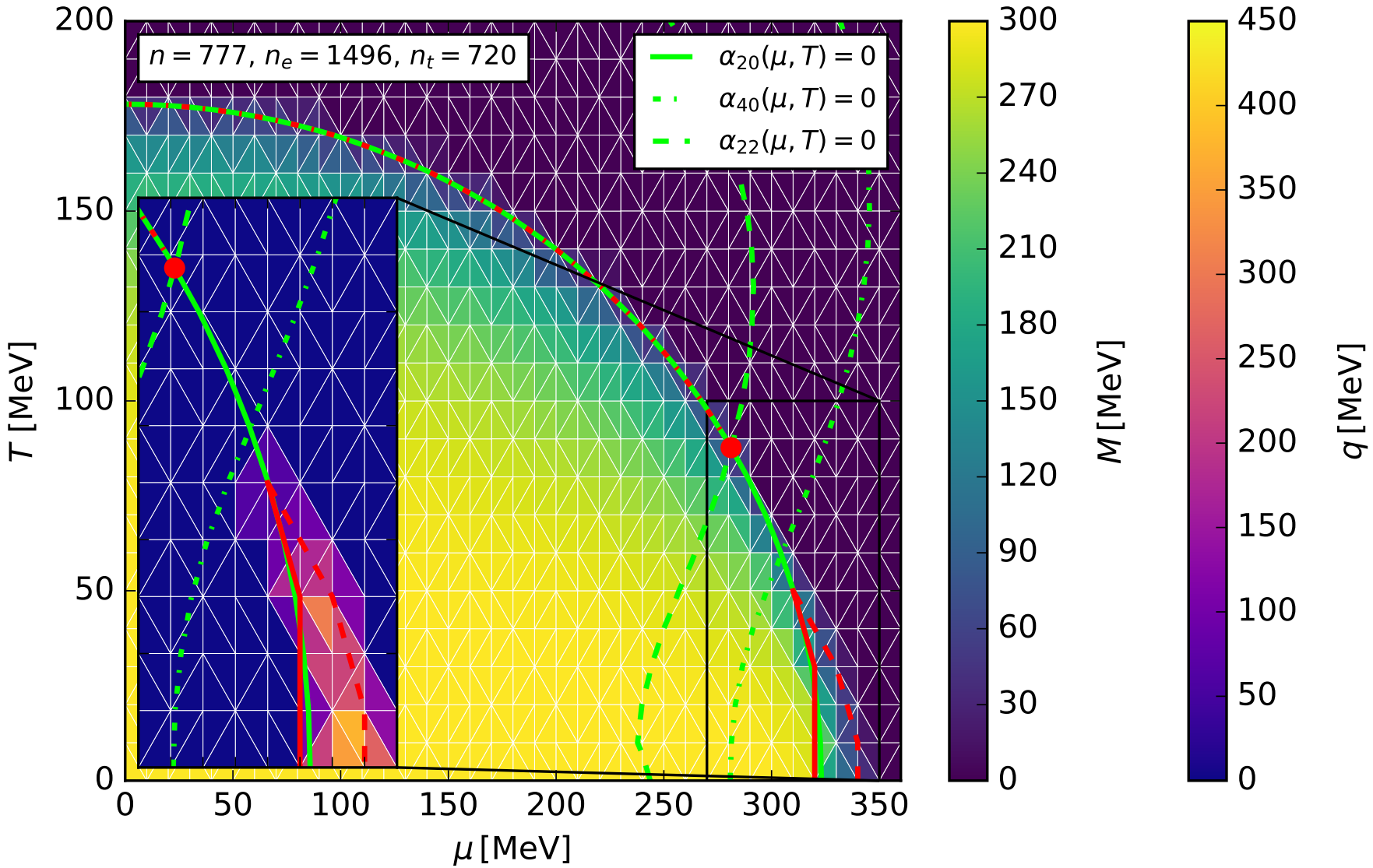


- $t_W = 4.5$ minutes, $t_C = 62$ minutes $(\sim t_W \times 13)$[1]
- ~ 96.2 Ω-pts./s
- initial tiles: $10 \times 10\,\mathrm{MeV}^2 \rightarrow$ level 5 tiles: $0.325 \times 0.325\,\mathrm{MeV}^2$
- BSAM(R) saving factor 28.26 $(\sim 2$ hours$)$

[1] 24 OMP threads on AMD Ryzen™ 9 3900X @ $\sim 4\,\mathrm{GHz}$

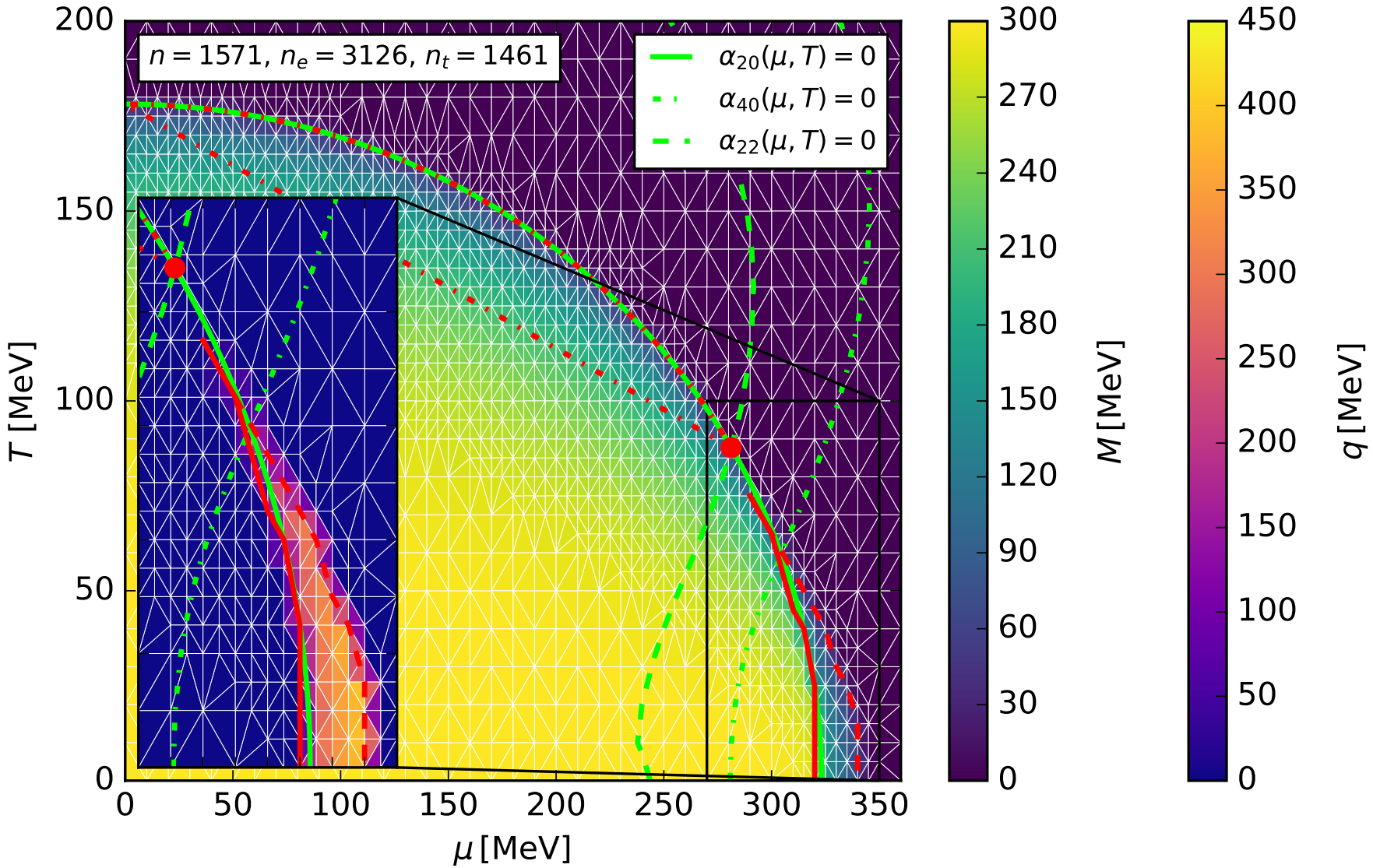
Inhomogeneous (CDW) RG consistent MF PD

RP*, λ_k^{exp}, $\Lambda' = 2\,\mathrm{GeV}$, $\Lambda = 5\,\mathrm{GeV}$, $f_\pi^{\mathrm{r}} = 88\,\mathrm{MeV}$, $M_\psi = 300\,\mathrm{MeV}$, $m_\sigma^{\mathrm{p}} = 550\,\mathrm{MeV}$



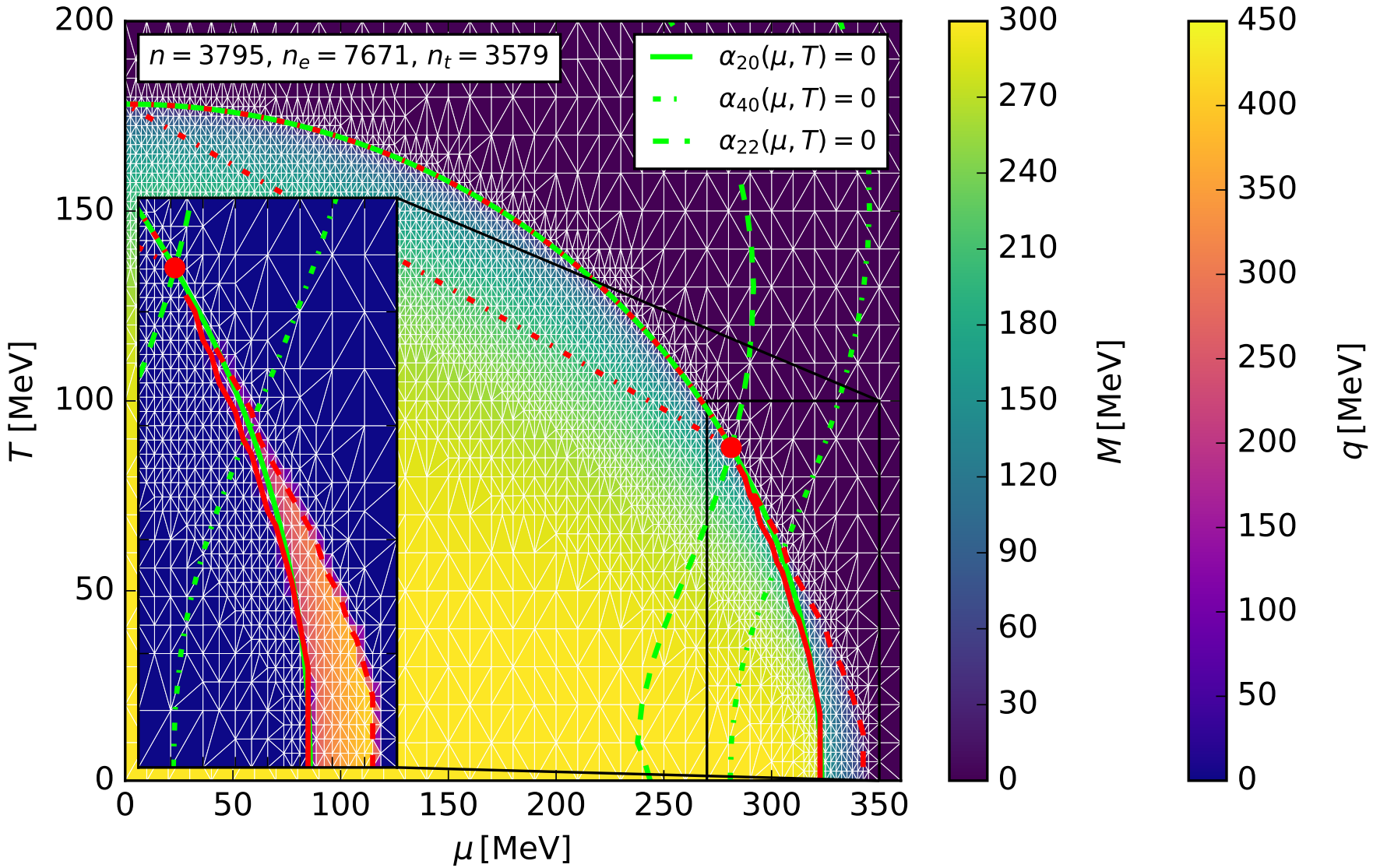
Inhomogeneous (CDW) RG consistent MF PD

RP*, λ_k^{exp}, $\Lambda' = 2\,\mathrm{GeV}$, $\Lambda = 5\,\mathrm{GeV}$, $f_\pi^{\mathrm{r}} = 88\,\mathrm{MeV}$, $M_\psi = 300\,\mathrm{MeV}$, $m_\sigma^{\mathrm{p}} = 550\,\mathrm{MeV}$



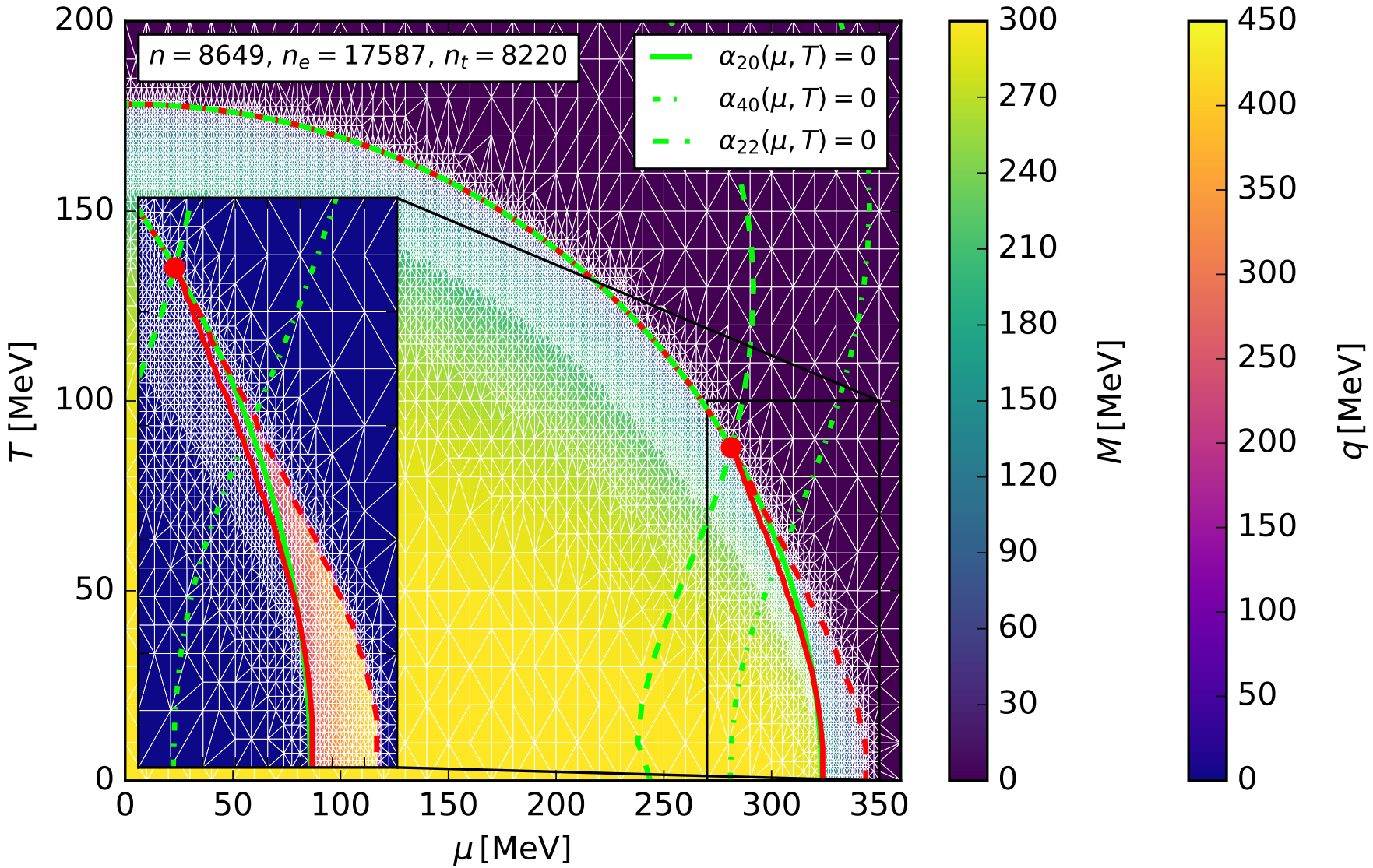
Inhomogeneous (CDW) RG consistent MF PD

RP*, λ_k^{exp}, $\Lambda' = 2\,\mathrm{GeV}$, $\Lambda = 5\,\mathrm{GeV}$, $f_\pi^{\mathrm{r}} = 88\,\mathrm{MeV}$, $M_\psi = 300\,\mathrm{MeV}$, $m_\sigma^{\mathrm{p}} = 550\,\mathrm{MeV}$



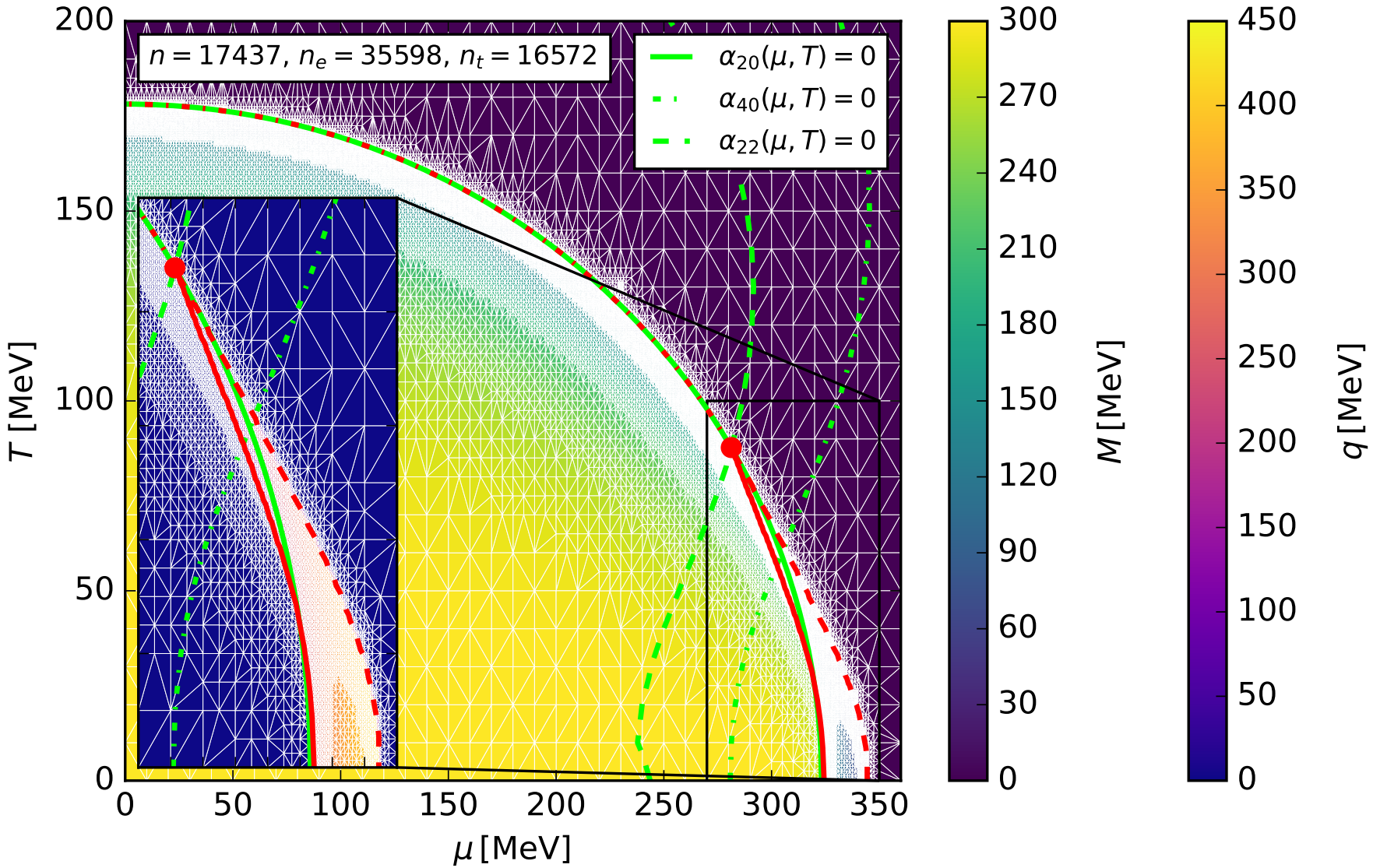
Inhomogeneous (CDW) RG consistent MF PD

RP*, λ_k^{exp}, $\Lambda' = 2\,\mathrm{GeV}$, $\Lambda = 5\,\mathrm{GeV}$, $f_\pi^{\mathrm{r}} = 88\,\mathrm{MeV}$, $M_\psi = 300\,\mathrm{MeV}$, $m_\sigma^{\mathrm{p}} = 550\,\mathrm{MeV}$



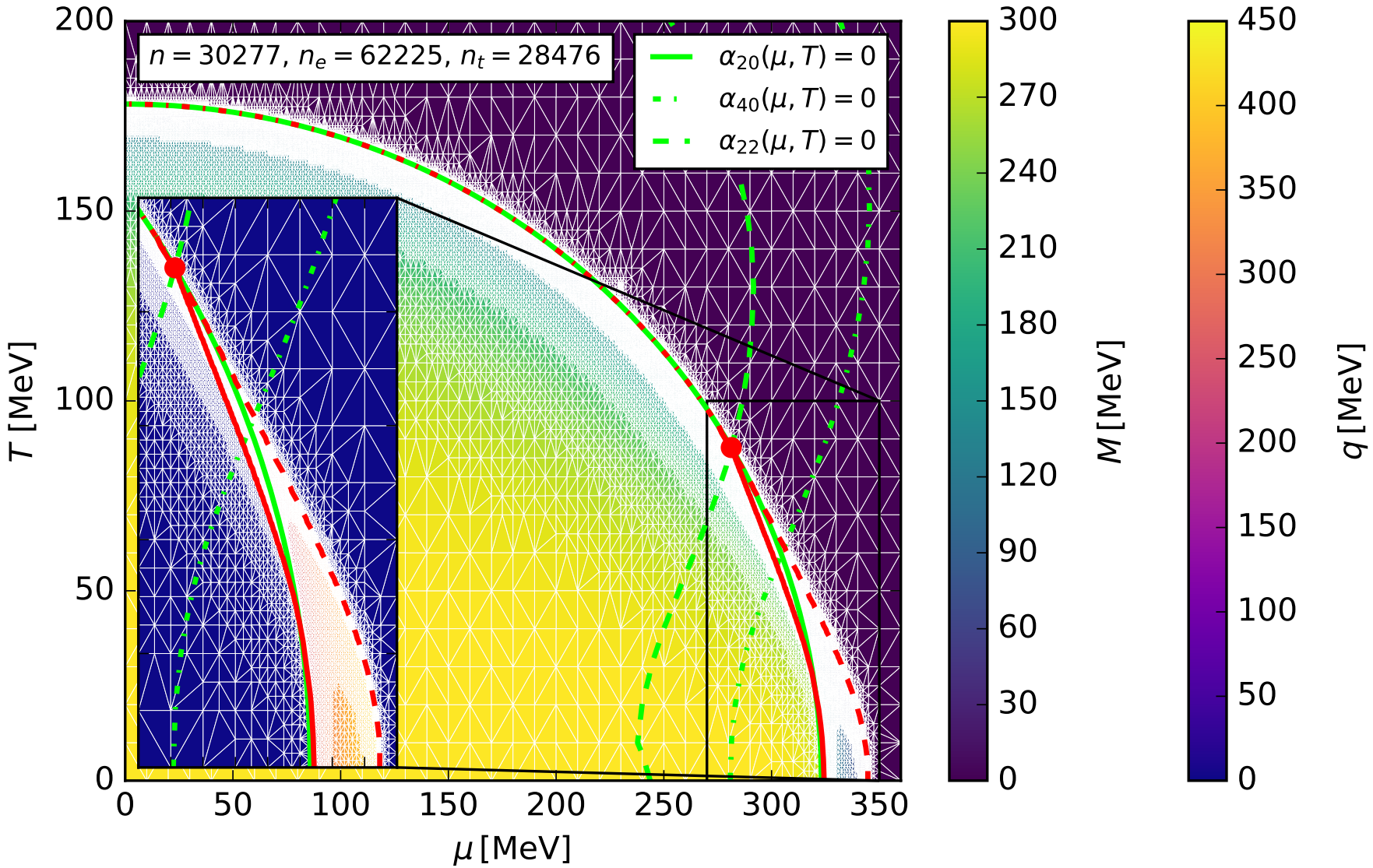
Inhomogeneous (CDW) RG consistent MF PD

RP*, λ_k^{exp}, $\Lambda' = 2\,\mathrm{GeV}$, $\Lambda = 5\,\mathrm{GeV}$, $f_\pi^{\mathrm{r}} = 88\,\mathrm{MeV}$, $M_\psi = 300\,\mathrm{MeV}$, $m_\sigma^{\mathrm{p}} = 550\,\mathrm{MeV}$



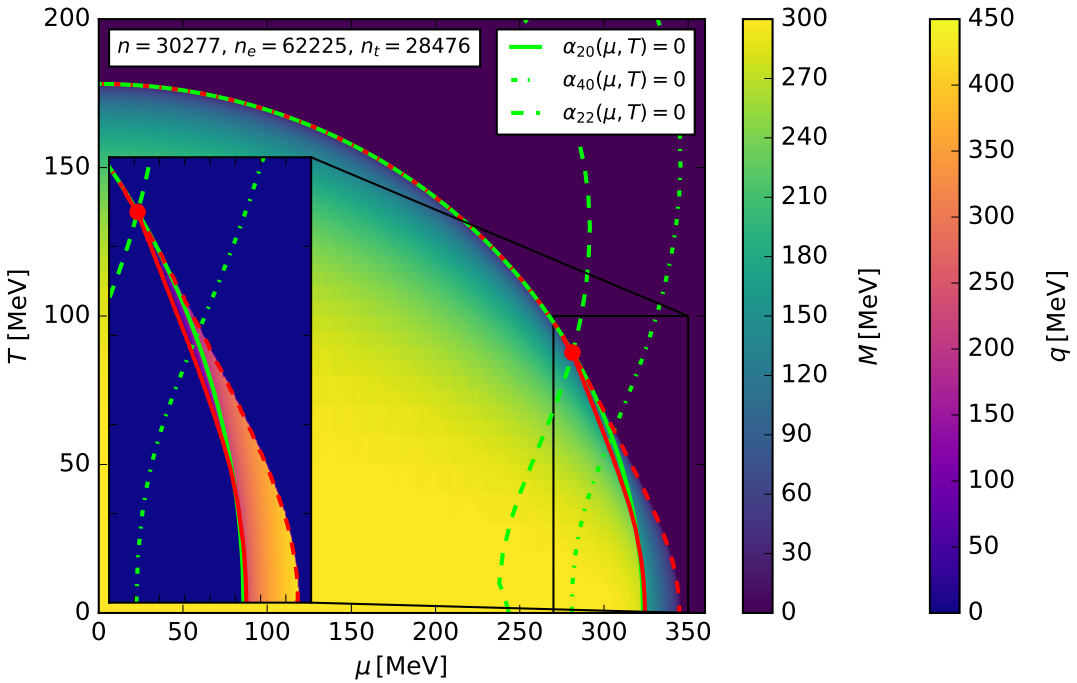
Inhomogeneous (CDW) RG consistent MF PD

RP*, λ_k^{exp}, $\Lambda' = 2\,\mathrm{GeV}$, $\Lambda = 5\,\mathrm{GeV}$, $f_\pi^{\mathrm{r}} = 88\,\mathrm{MeV}$, $M_\psi = 300\,\mathrm{MeV}$, $m_\sigma^{\mathrm{p}} = 550\,\mathrm{MeV}$



Inhomogeneous (CDW) RG consistent MF PD

RP*, λ_k^{exp}, $\Lambda' = 2\,\mathrm{GeV}$, $\Lambda = 5\,\mathrm{GeV}$, $f_\pi^{\mathrm{r}} = 88\,\mathrm{MeV}$, $M_\psi = 300\,\mathrm{MeV}$, $m_\sigma^{\mathrm{p}} = 550\,\mathrm{MeV}$



- $t_W = 371$ minutes, $t_C = 6700$ minutes $(\sim t_W \times 18)$[2]
- ~ 1.3 Ω-pts./s
- initial tiles: $10 \times 10\,\mathrm{MeV}^2 \rightarrow$ level 5 tiles: $0.325 \times 0.325\,\mathrm{MeV}^2$
- BSAM(R) saving factor 24.35 $(\sim 6$ days!)

[2] 24 OMP threads on AMD Ryzen™ 9 3900X @ $\sim 4\,\mathrm{GHz}$

Numerical extraction of GL-type coefficients

Interpolating polynomial

$$P_\alpha(M,Q) = \sum_{i=0}^{2}\sum_{j=0}^{2} \frac{\alpha_{2i2j}(\mu,T)}{(2i)!(2j)!} M^{2i} q^{2j}$$

on a 3×3 grid $\{M_i, q_j, \Omega_{i,j}\}$ with $M_i = \Delta M i$, $q_j = \Delta q j$ where $\Delta M = 5\,\mathrm{MeV}$ and $\Delta q = 20\,\mathrm{MeV}$:

$$\vdots$$

$$\alpha_{20} = -\frac{15\Omega_{0,0} - 16\Omega_{1,0} + \Omega_{2,0}}{12\Delta M^2}$$

$$\alpha_{40} = \frac{2\left(3\Omega_{0,0} - 4\Omega_{1,0} + \Omega_{2,0}\right)}{\Delta M^4}$$

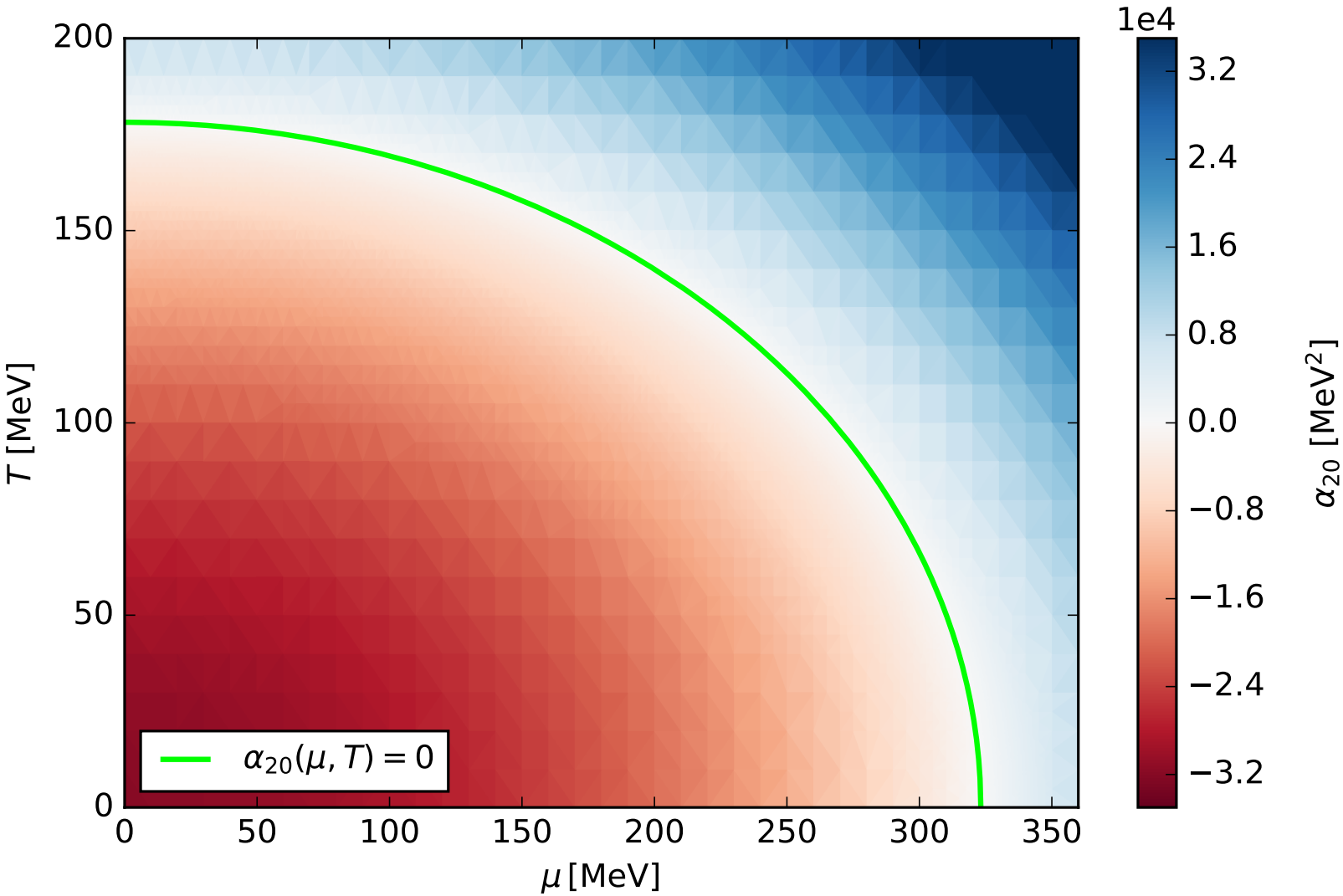
$$\alpha_{22} = \frac{-240\Omega_{1,0} + 256\Omega_{1,1} - 16\Omega_{1,2} + 15\Omega_{2,0} - 16\Omega_{2,1} + \Omega_{2,2}}{144\Delta M^2 \Delta q^2}$$

$$\vdots,$$

where we used $\Omega_{0,j} = \Omega_{0,0}\ \forall j$.

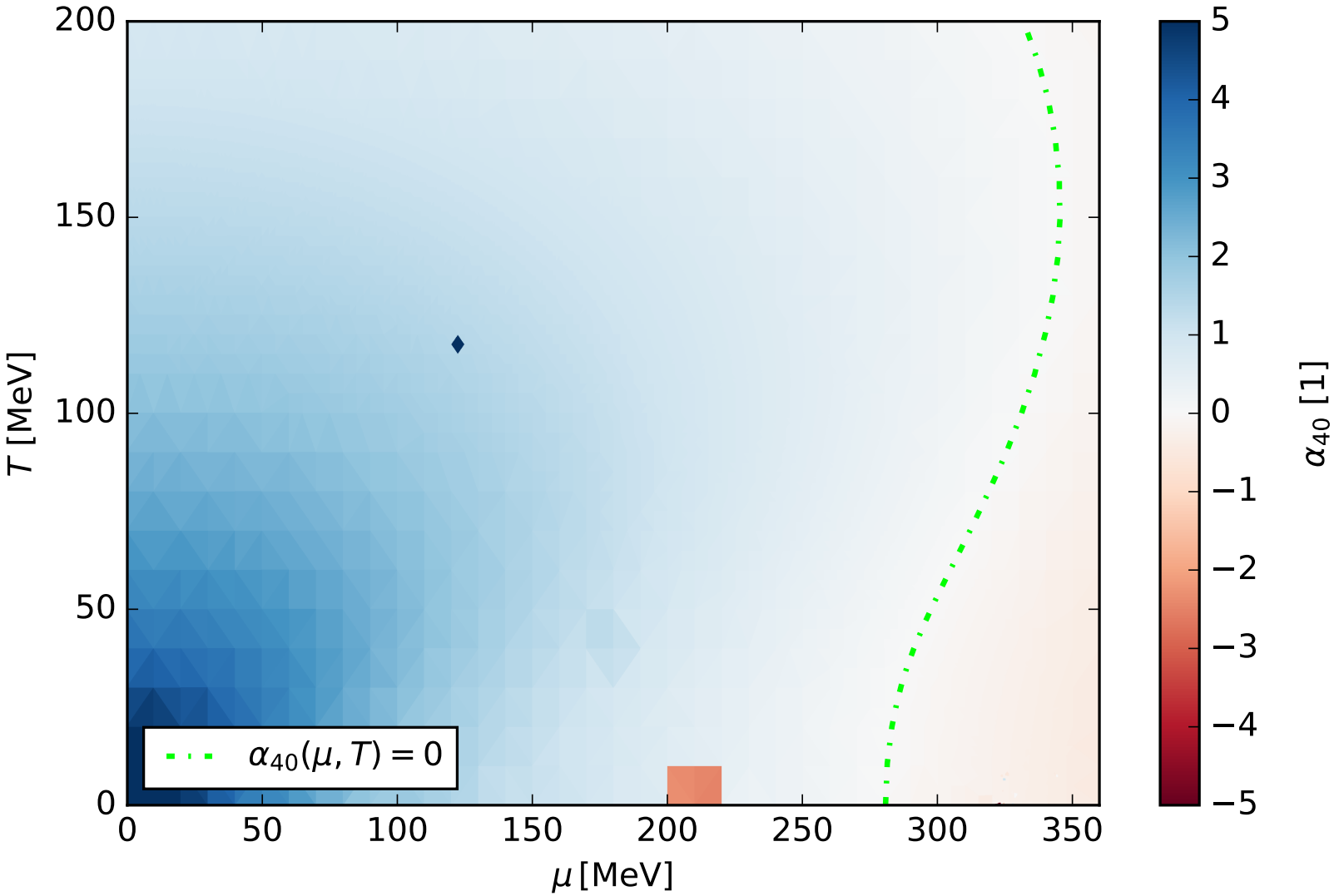
Numerical GL-type coefficients

RP*, λ_k^{exp}, $\Lambda' = 2\,\mathrm{GeV}$, $\Lambda = 5\,\mathrm{GeV}$, $f_\pi^{\mathrm{r}} = 88\,\mathrm{MeV}$, $M_\psi = 300\,\mathrm{MeV}$, $m_\sigma^{\mathrm{p}} = 550\,\mathrm{MeV}$



Numerical GL-type coefficients

RP*, λ_k^{exp}, $\Lambda' = 2\,\mathrm{GeV}$, $\Lambda = 5\,\mathrm{GeV}$, $f_\pi^{\mathrm{r}} = 88\,\mathrm{MeV}$, $M_\psi = 300\,\mathrm{MeV}$, $m_\sigma^{\mathrm{p}} = 550\,\mathrm{MeV}$



Numerical GL-type coefficients

RP*, λ_k^{exp}, $\Lambda' = 2\,\mathrm{GeV}$, $\Lambda = 5\,\mathrm{GeV}$, $f_\pi^{\mathrm{r}} = 88\,\mathrm{MeV}$, $M_\psi = 300\,\mathrm{MeV}$, $m_\sigma^{\mathrm{p}} = 550\,\mathrm{MeV}$