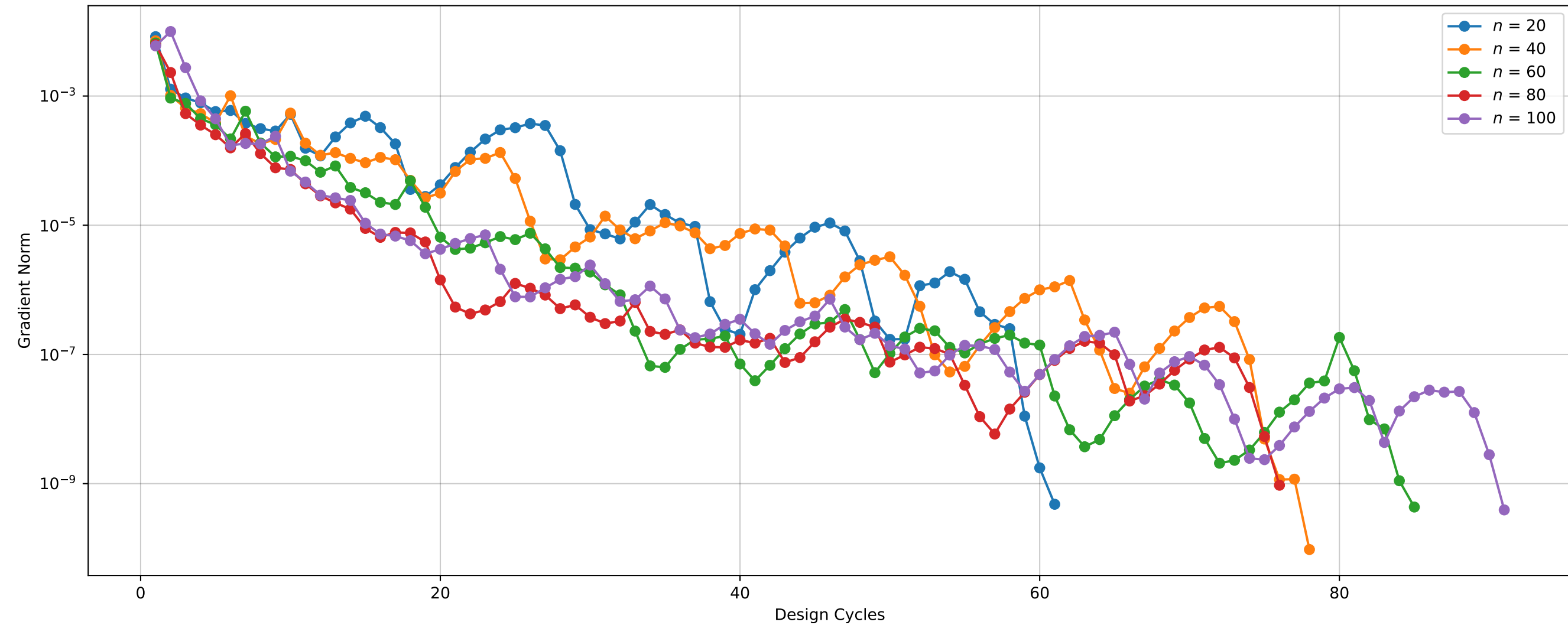
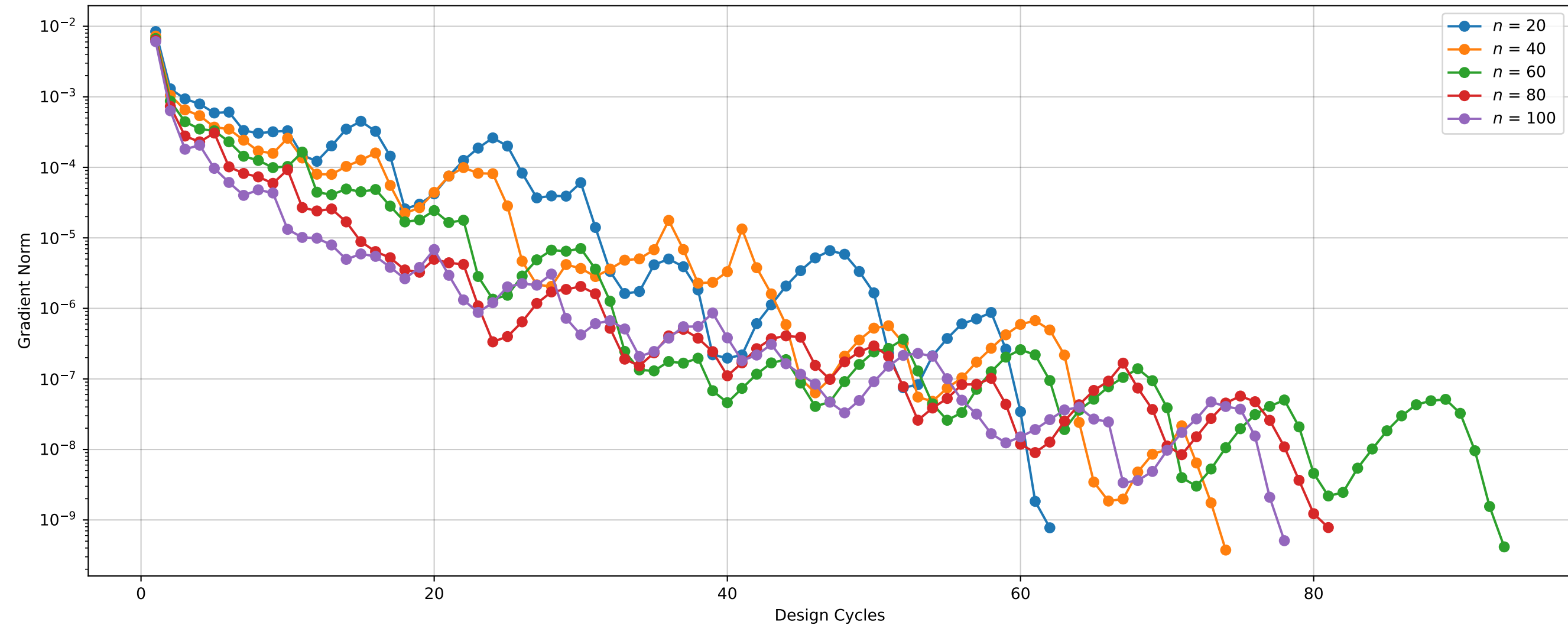


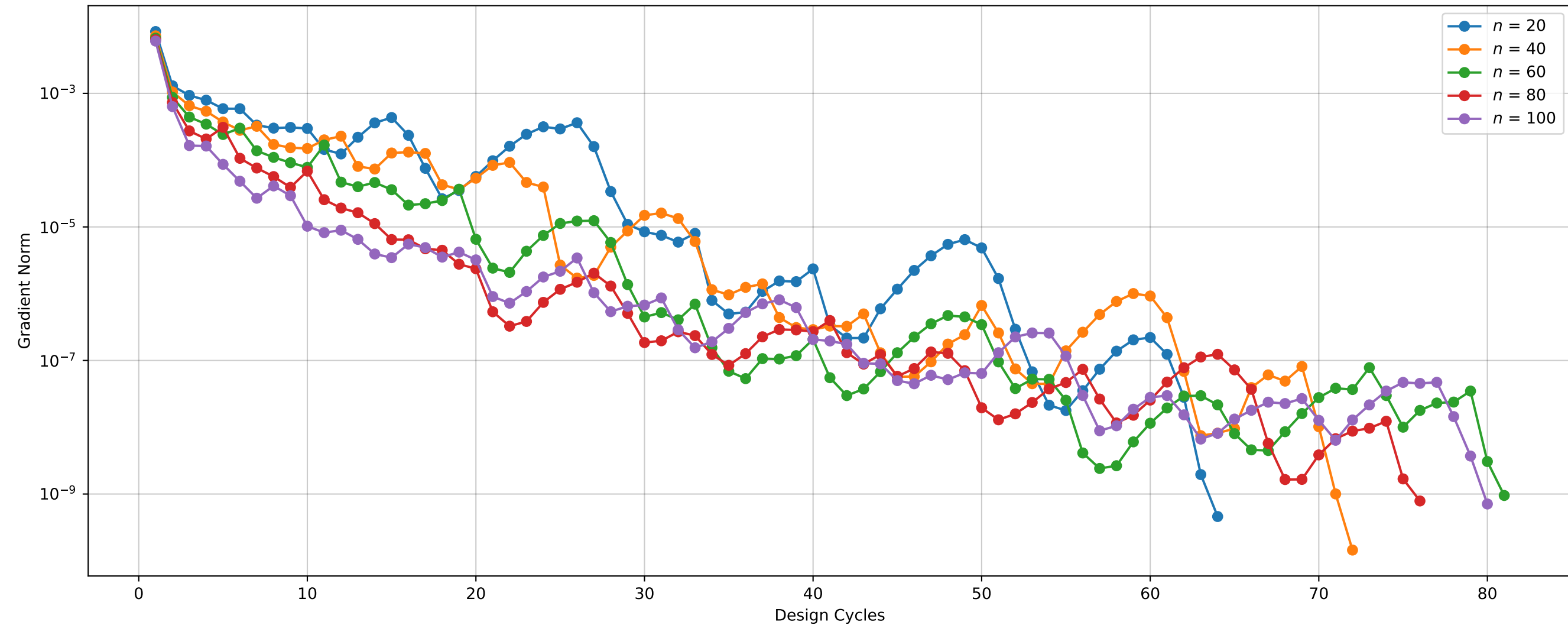
Reduced-space BFGS Gradient vs Design Cycles, $m = 4000$



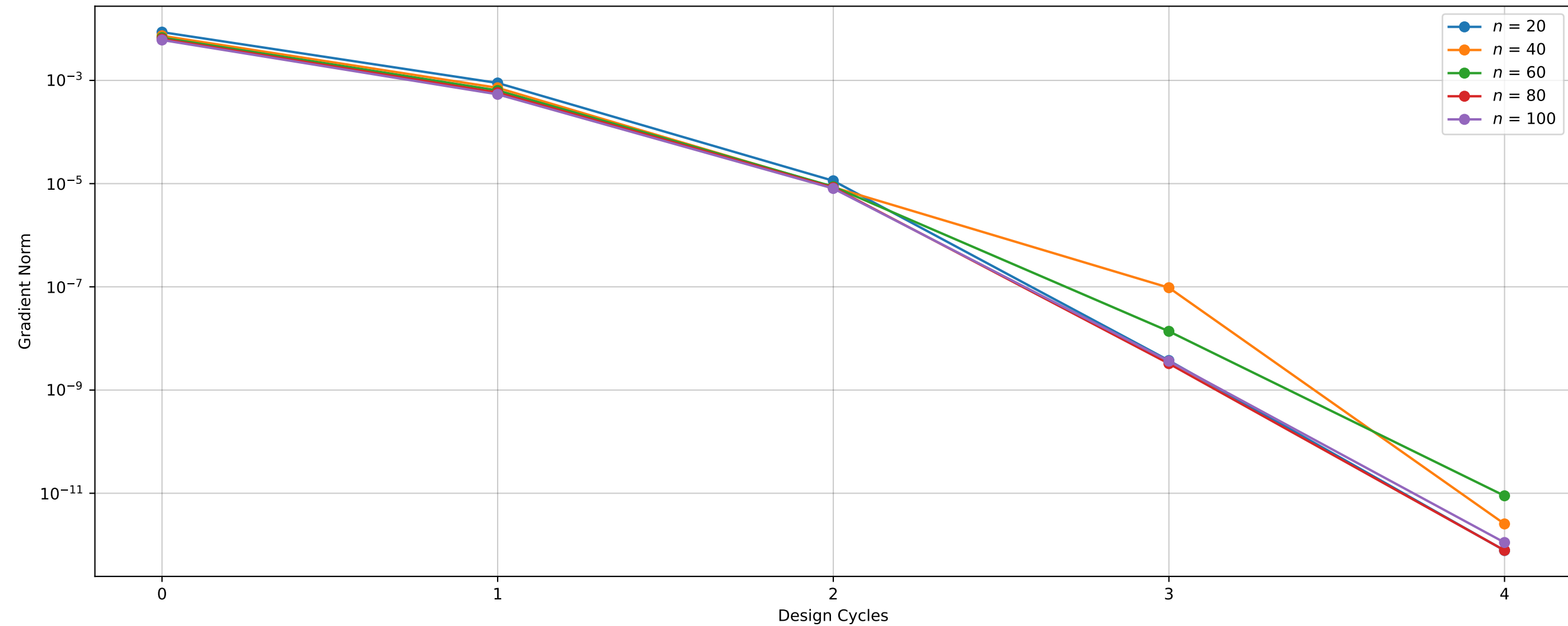
Reduced-space BFGS Gradient vs Design Cycles, $m = 9000$



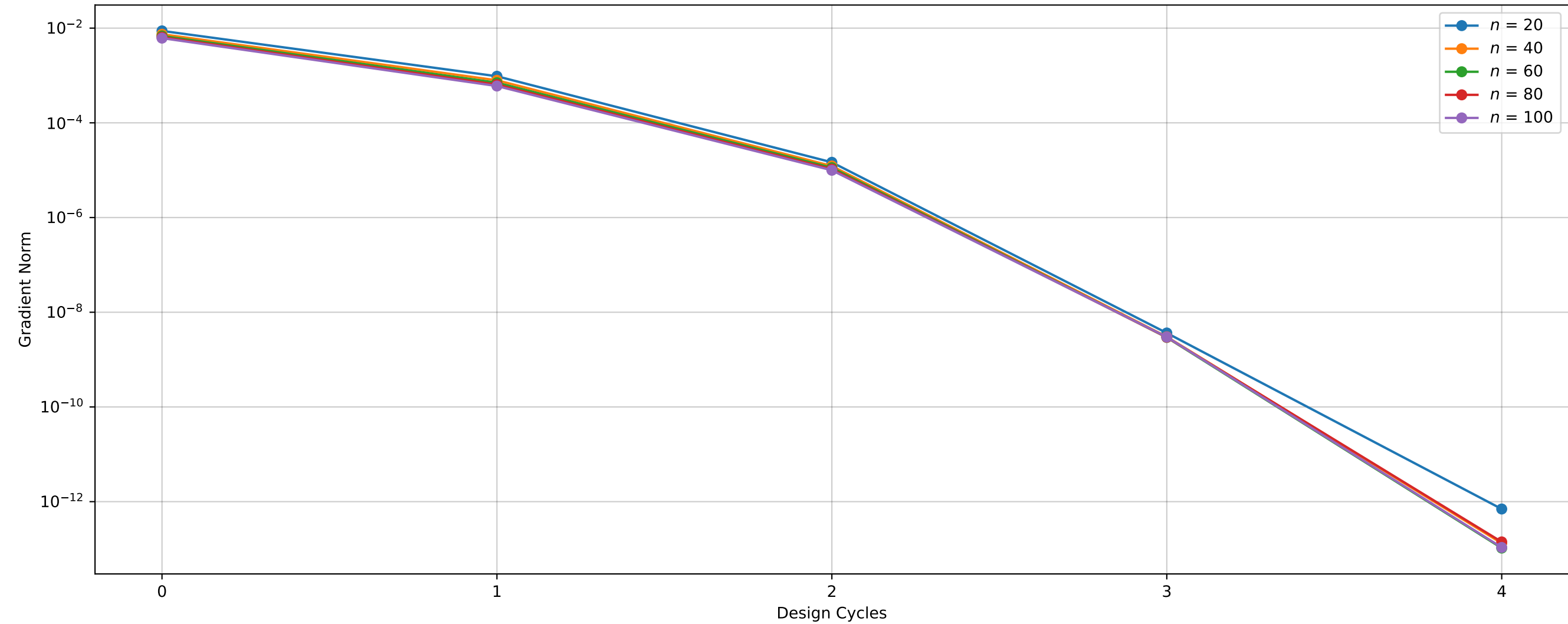
Reduced-space BFGS Gradient vs Design Cycles, $m = 16000$



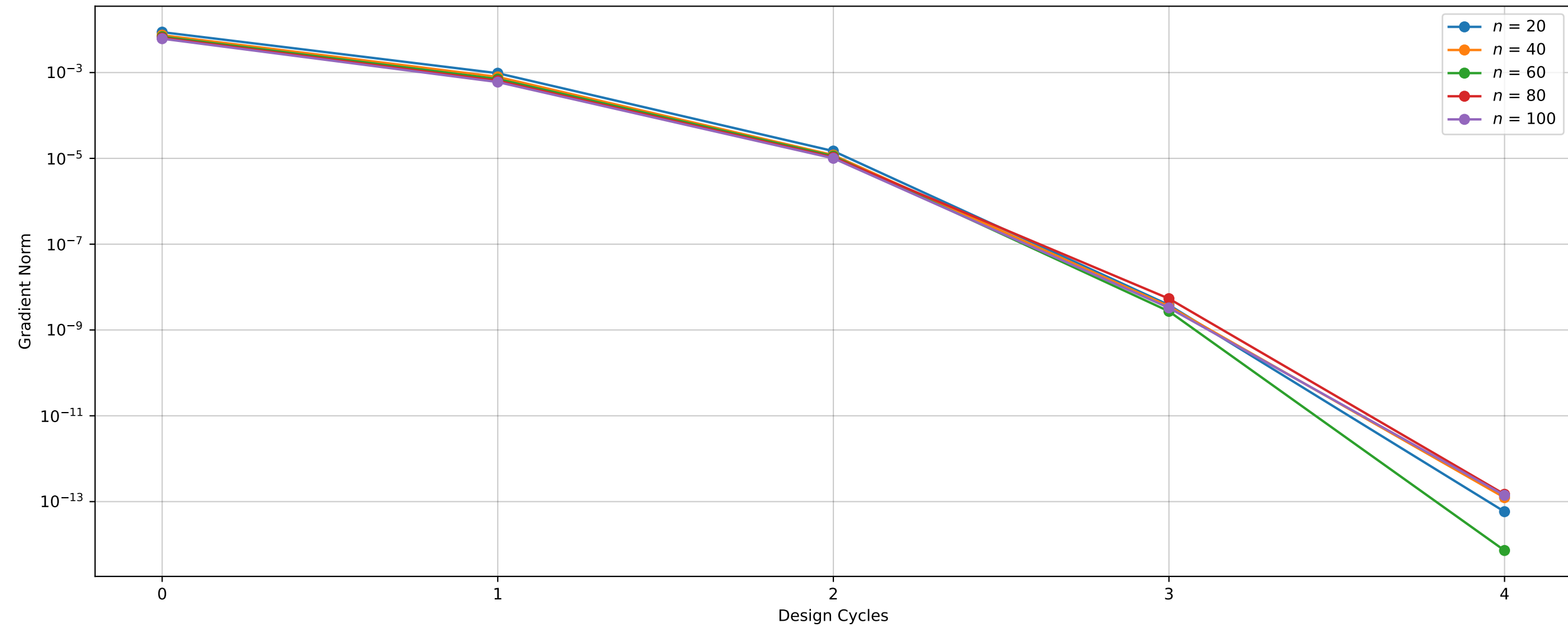
Reduced-space Newton Gradient vs Design Cycles, $m = 4000$



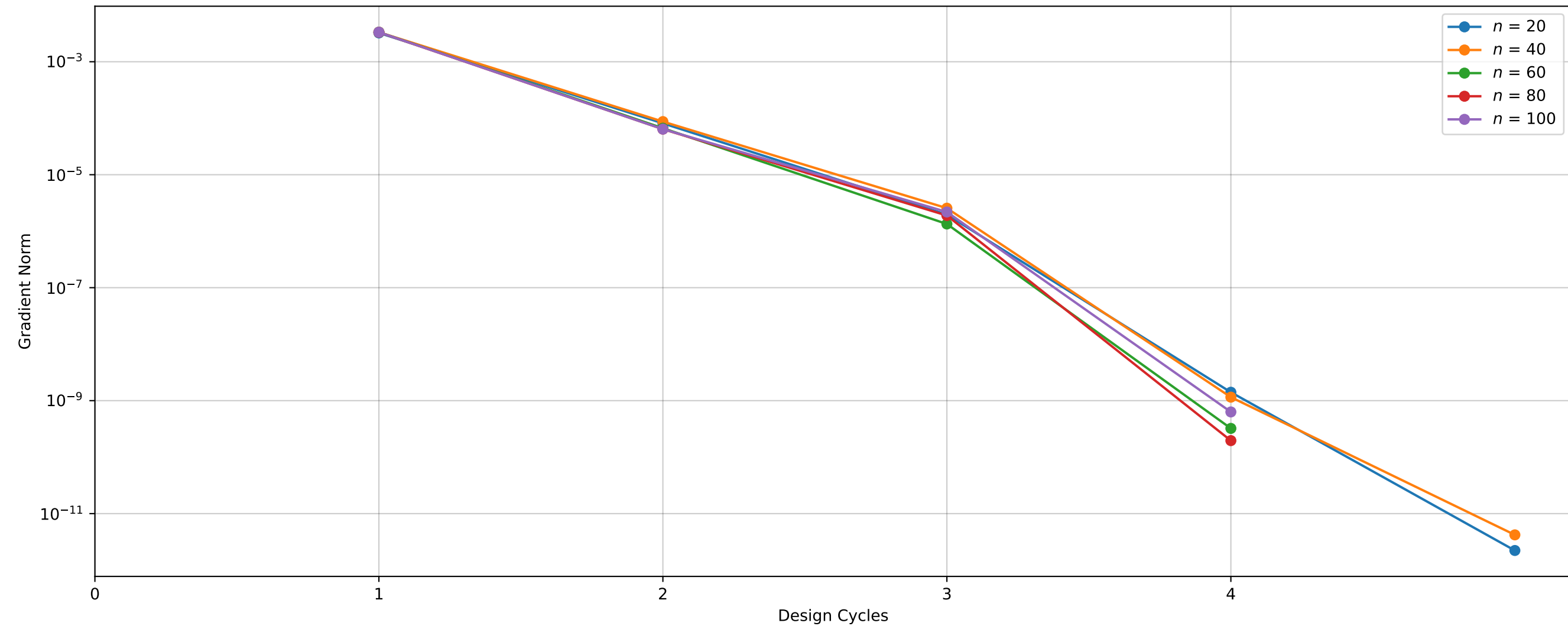
Reduced-space Newton Gradient vs Design Cycles, $m = 9000$



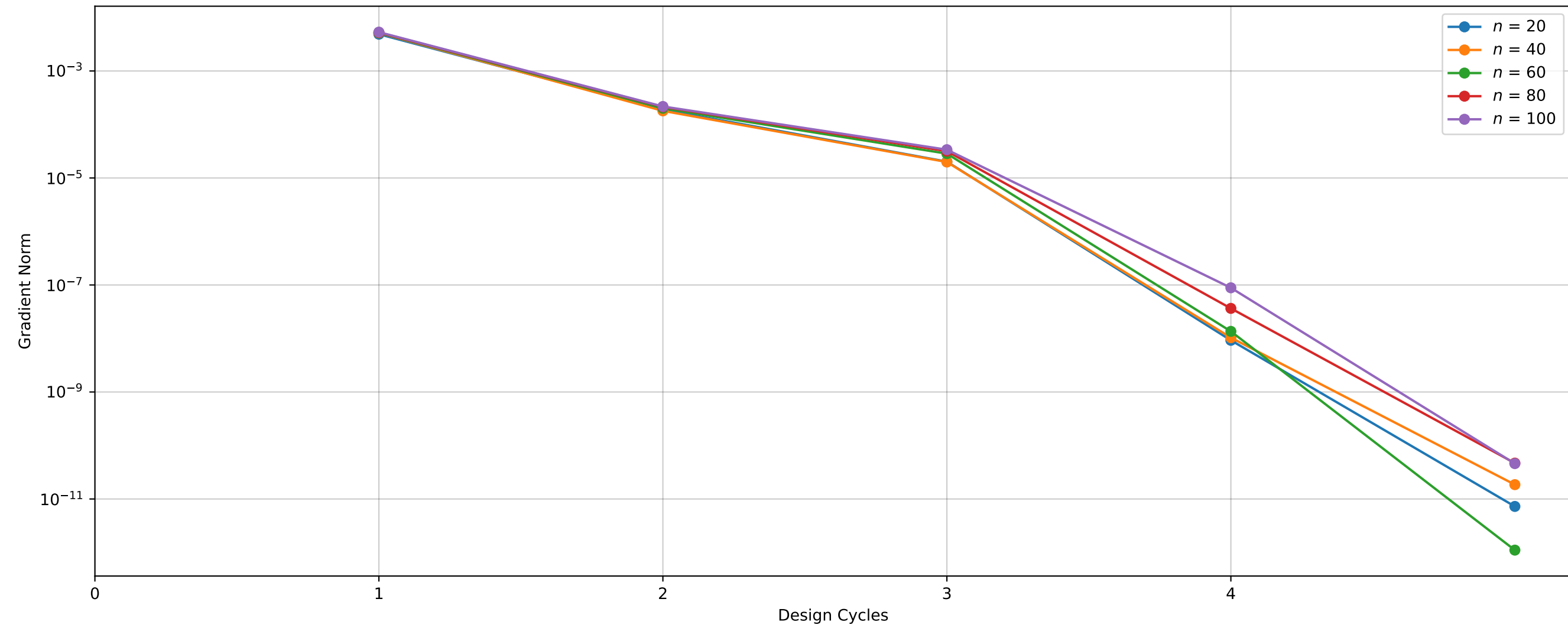
Reduced-space Newton Gradient vs Design Cycles, $m = 16000$

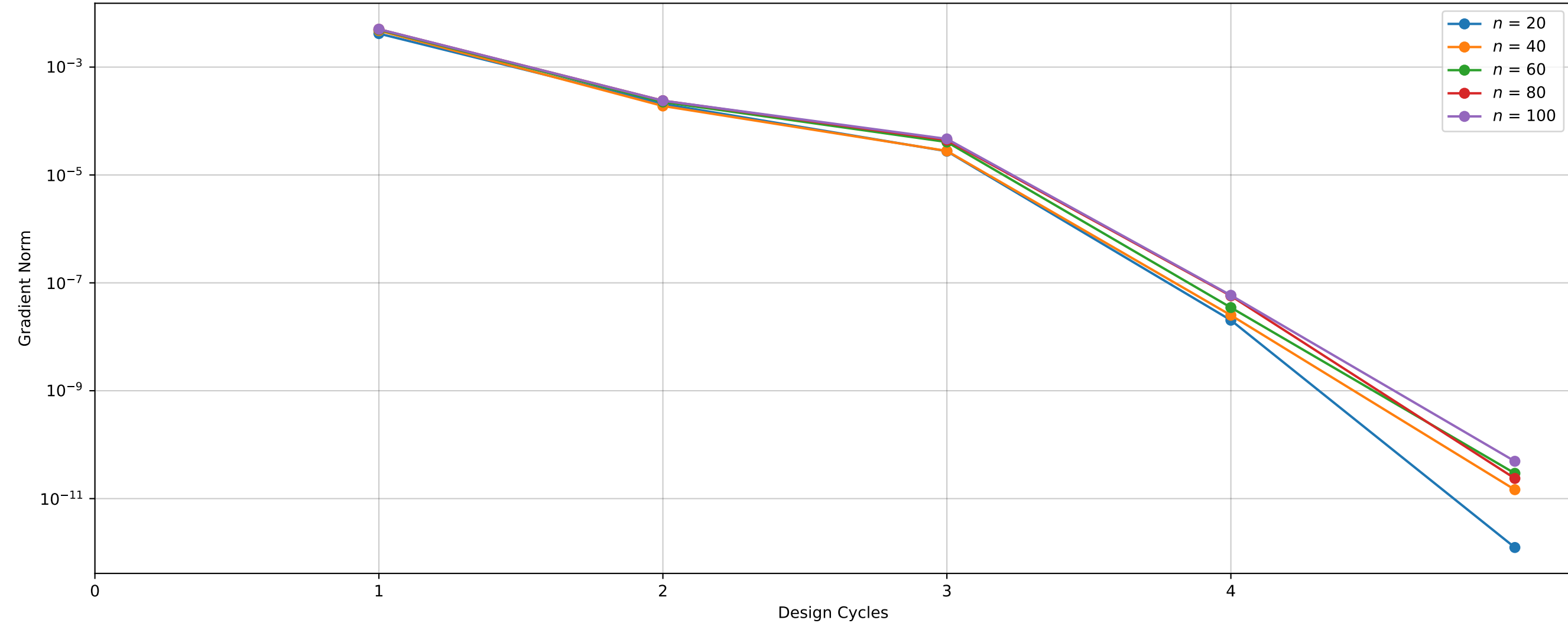


Full-space with \mathbf{P}_4 Gradient vs Design Cycles, $m = 4000$

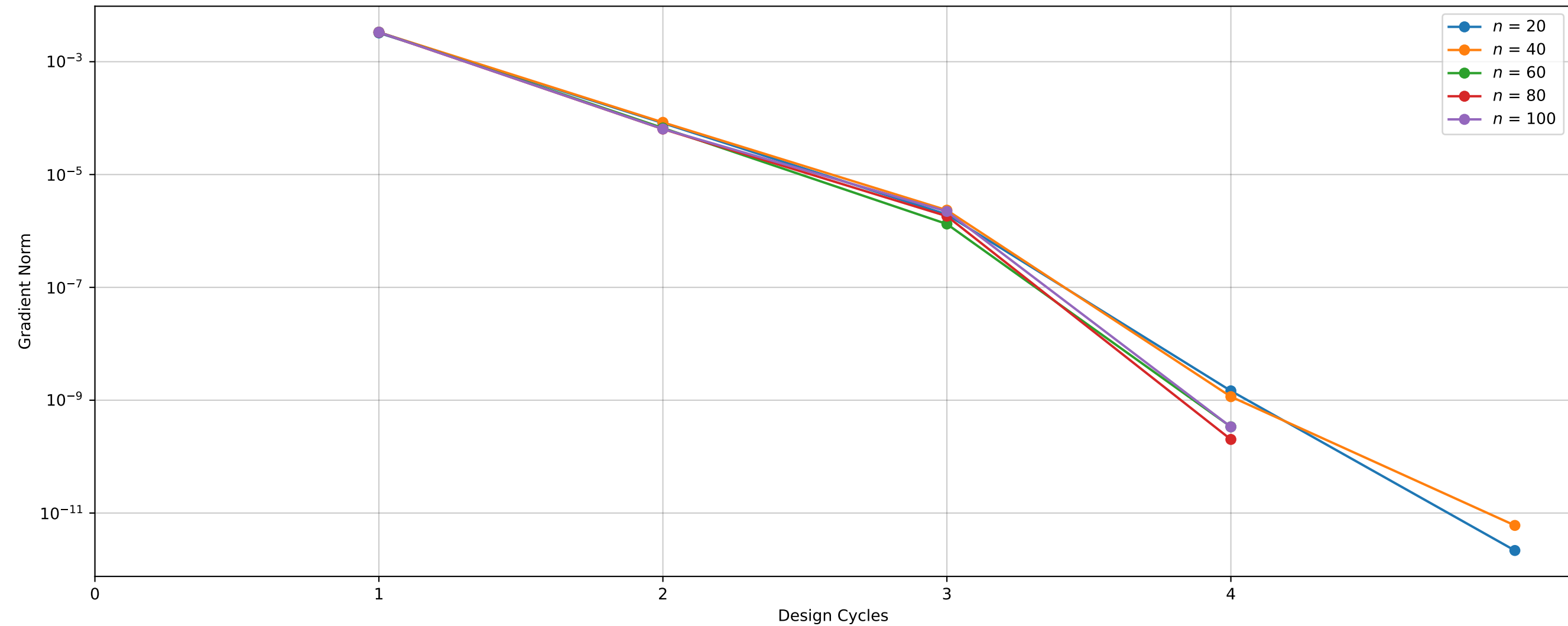


Full-space with \mathbf{P}_4 Gradient vs Design Cycles, $m = 9000$

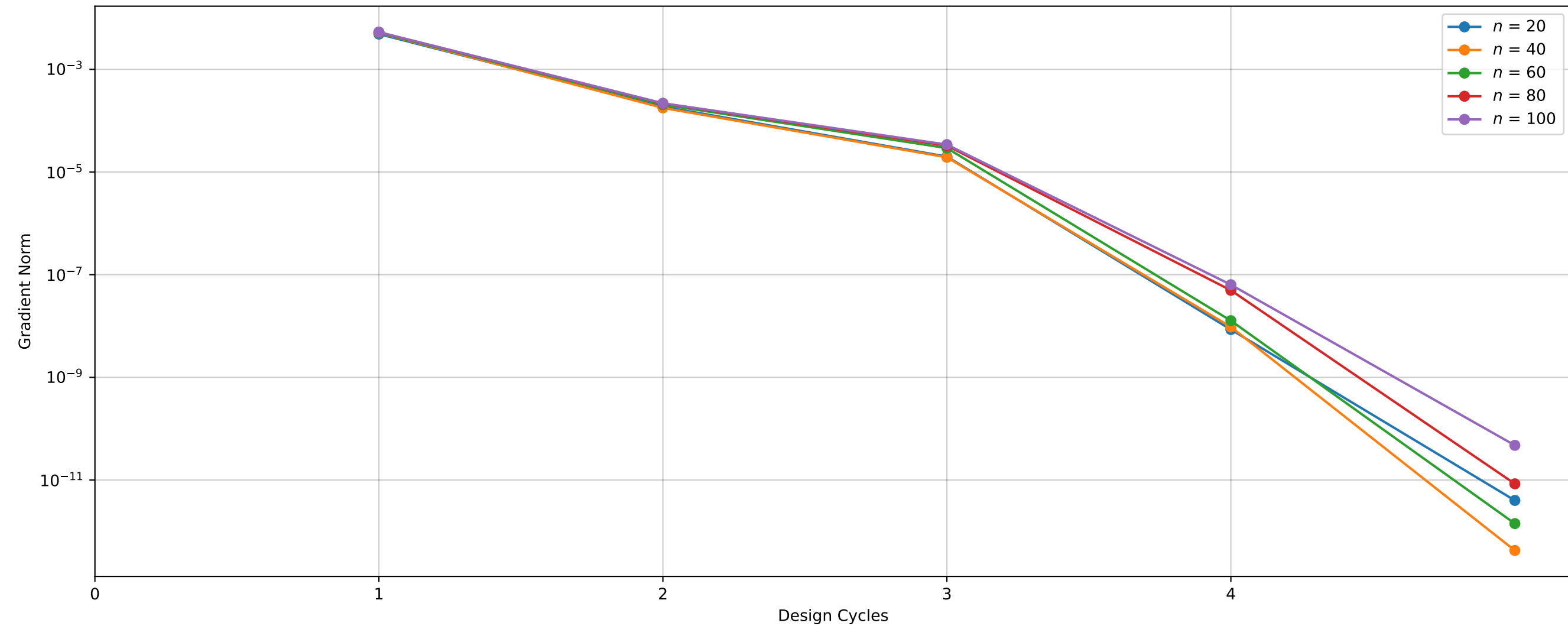


Full-space with \mathbf{P}_4 Gradient vs Design Cycles, $m = 16000$ 

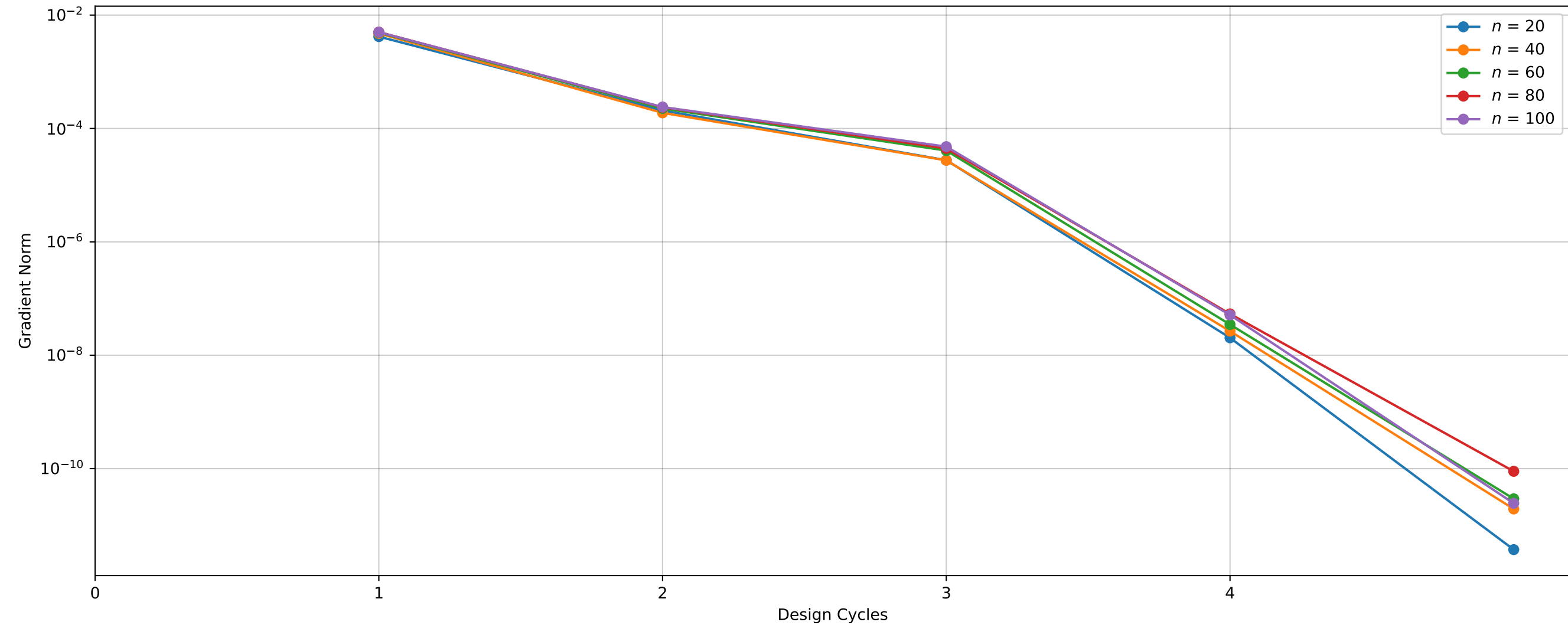
Full-space with \mathbf{P}_2 Gradient vs Design Cycles, $m = 4000$



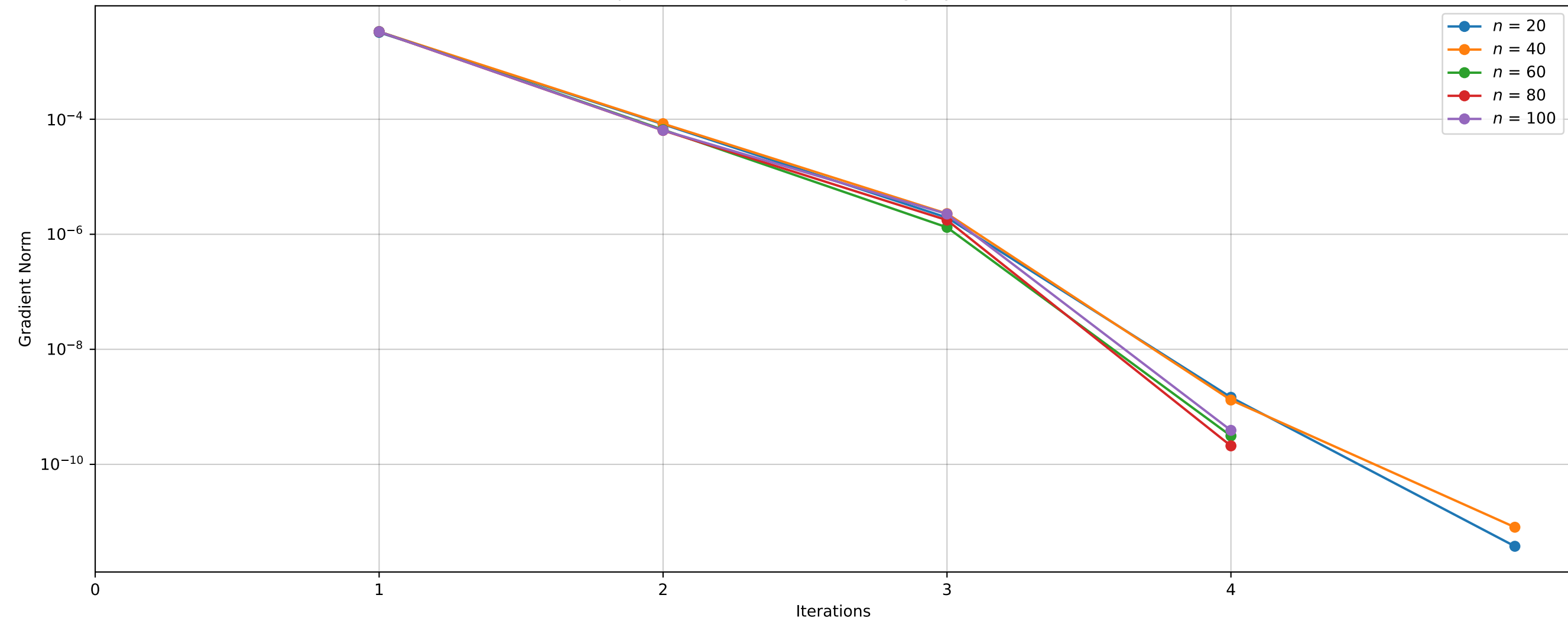
Full-space with \mathbf{P}_2 Gradient vs Design Cycles, $m = 9000$



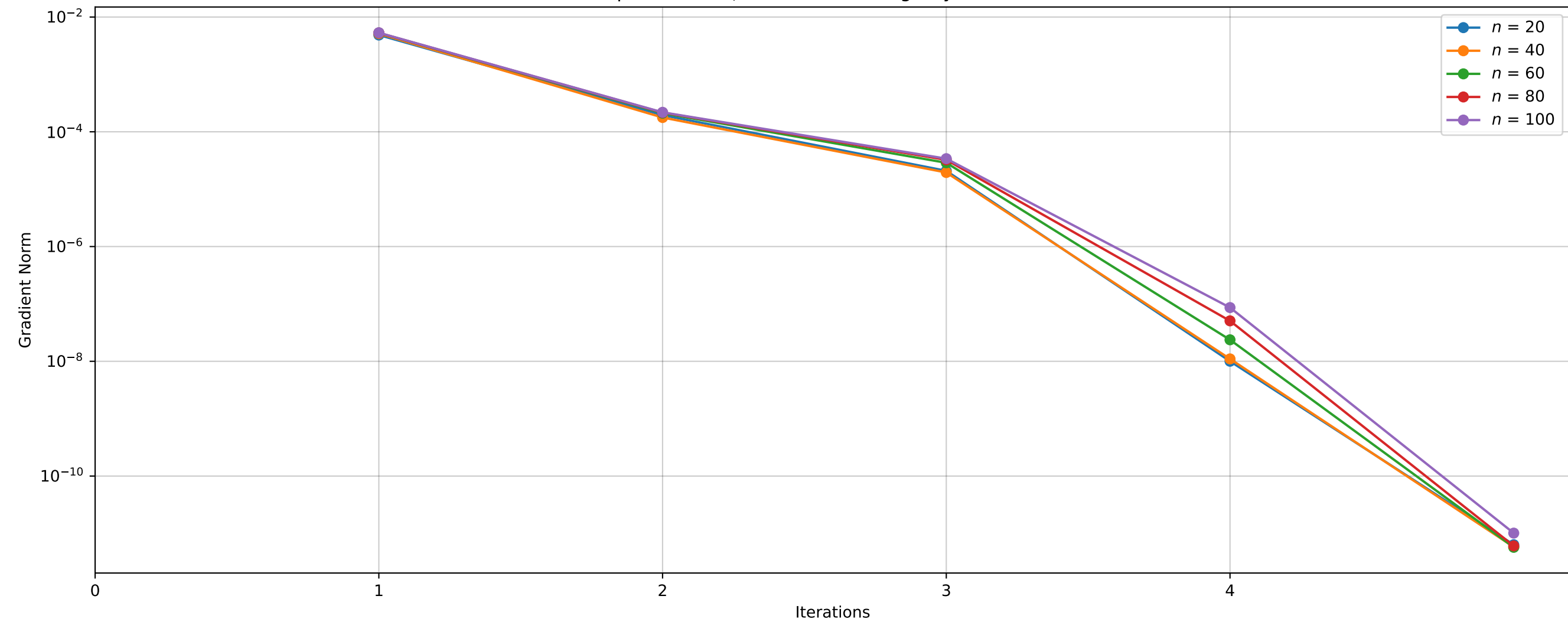
Full-space with \mathbf{P}_2 Gradient vs Design Cycles, $m = 16000$



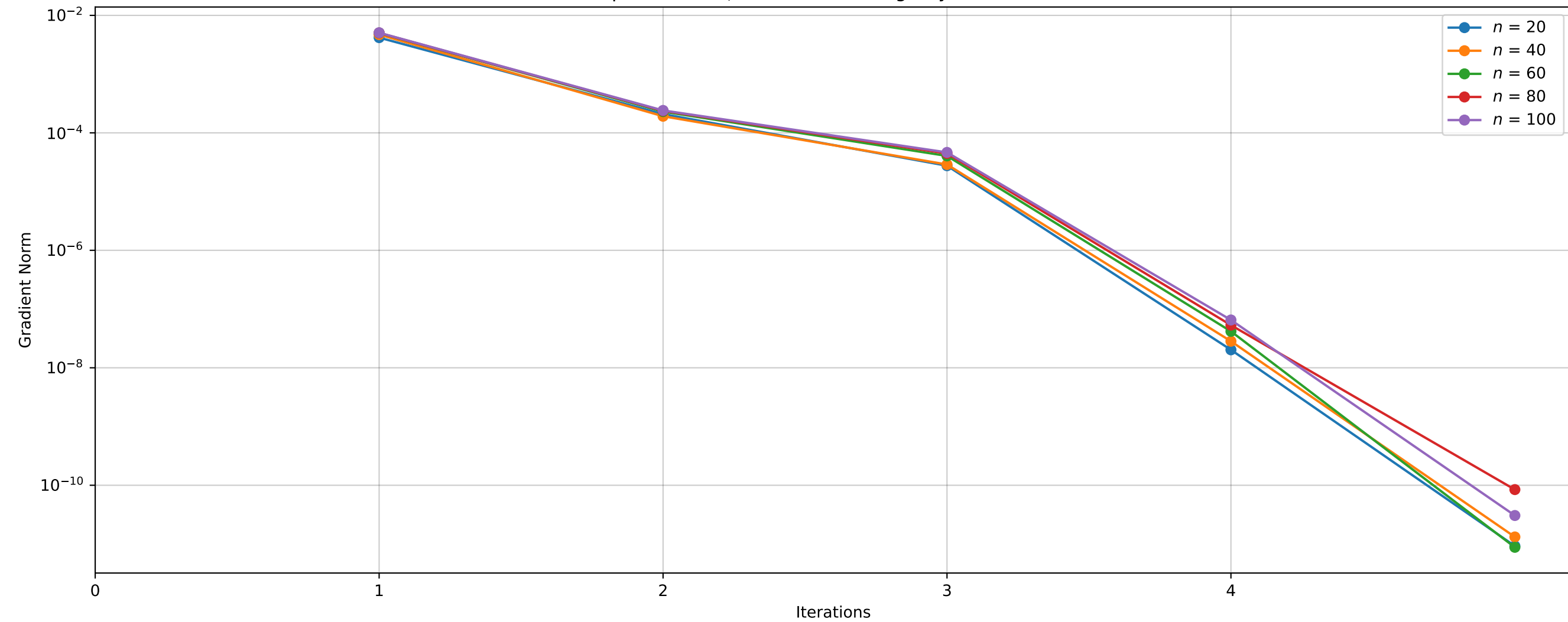
Full-space with $\tilde{\mathbf{P}}_4$ Gradient vs Design Cycles, $m = 4000$



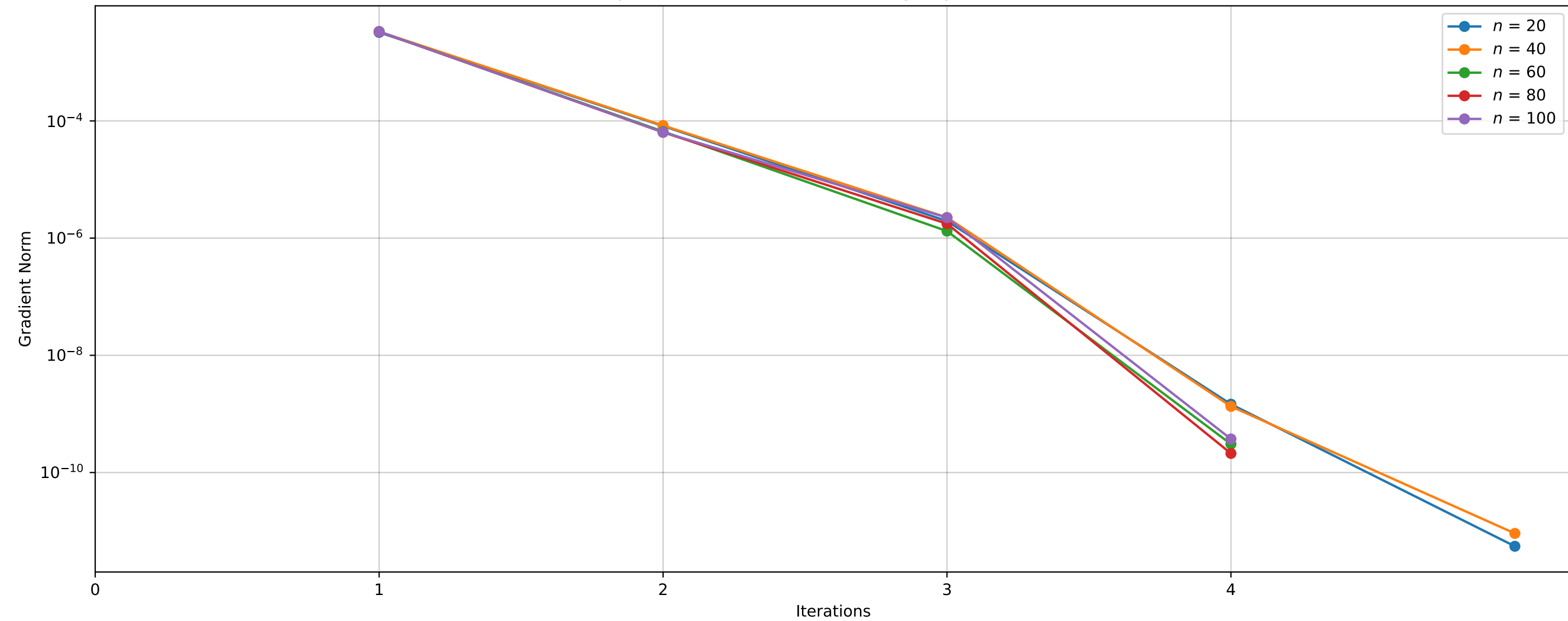
Full-space with $\tilde{\mathbf{P}}_4$ Gradient vs Design Cycles, $m = 9000$



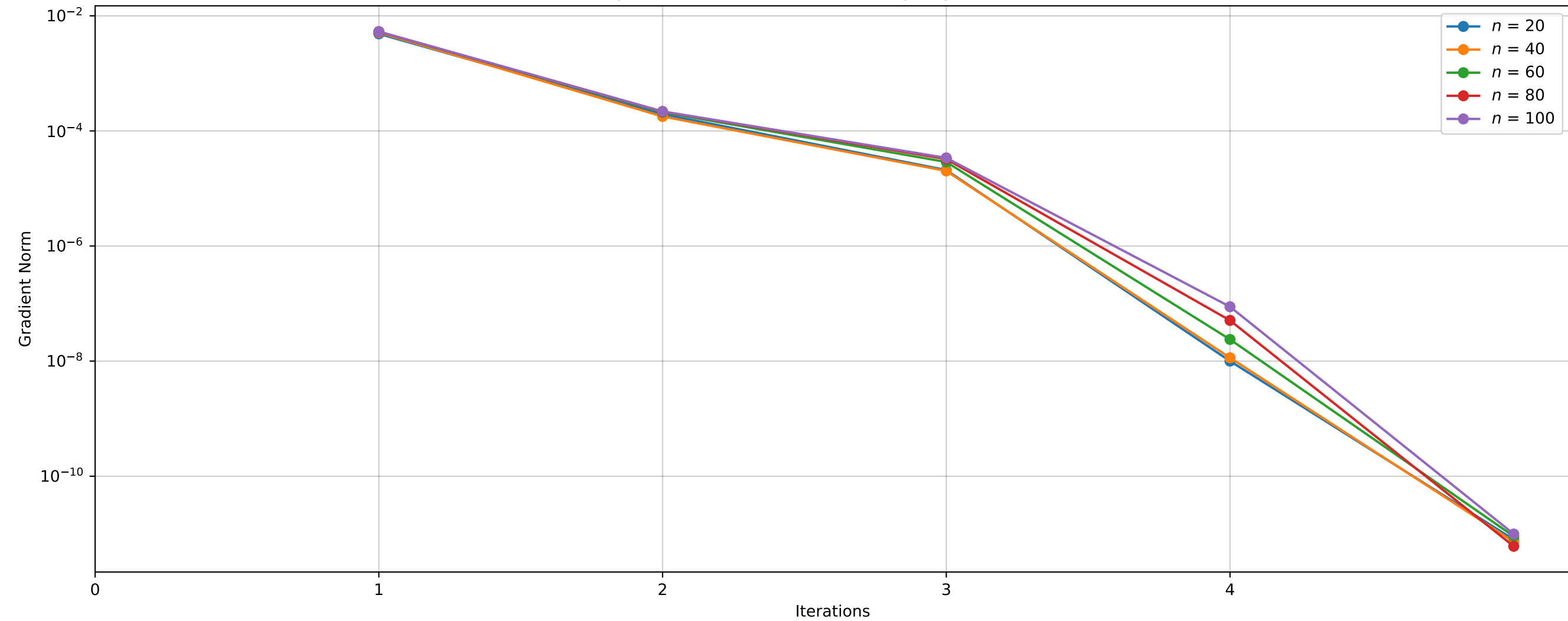
Full-space with $\tilde{\mathbf{P}}_4$ Gradient vs Design Cycles, $m = 16000$

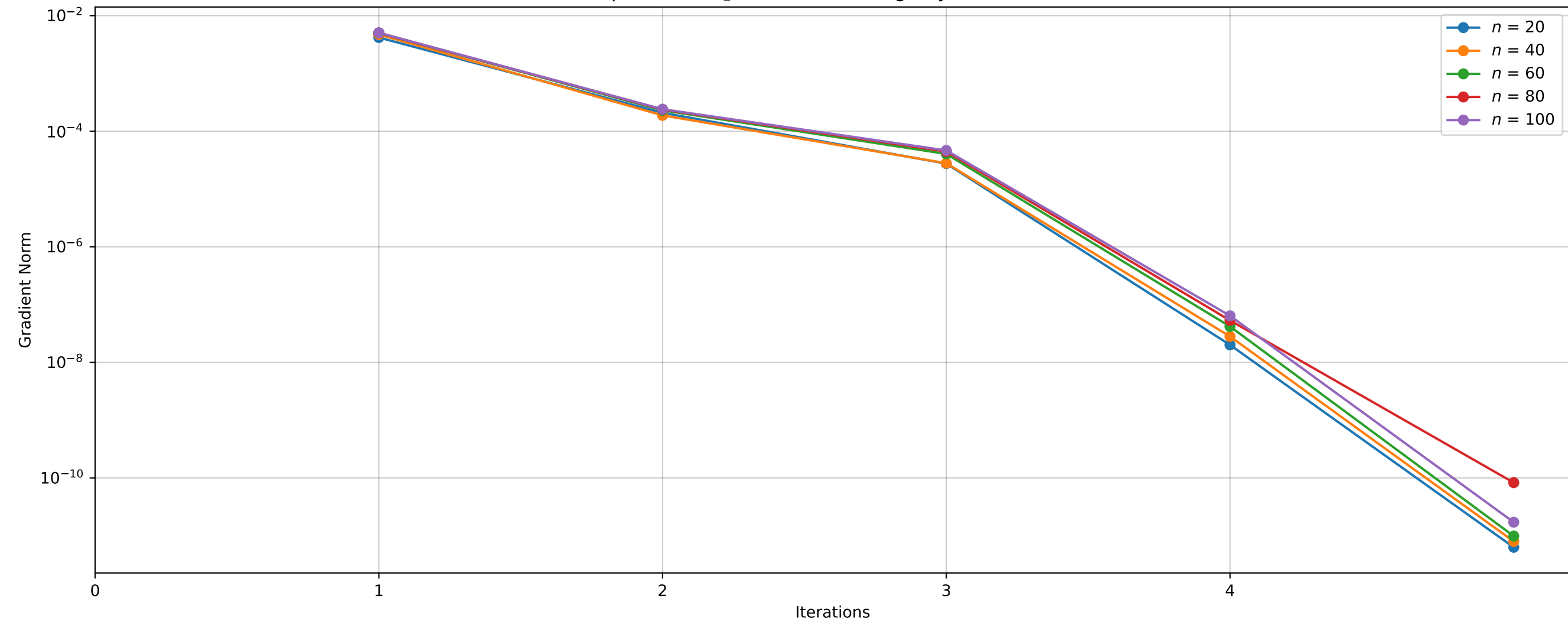


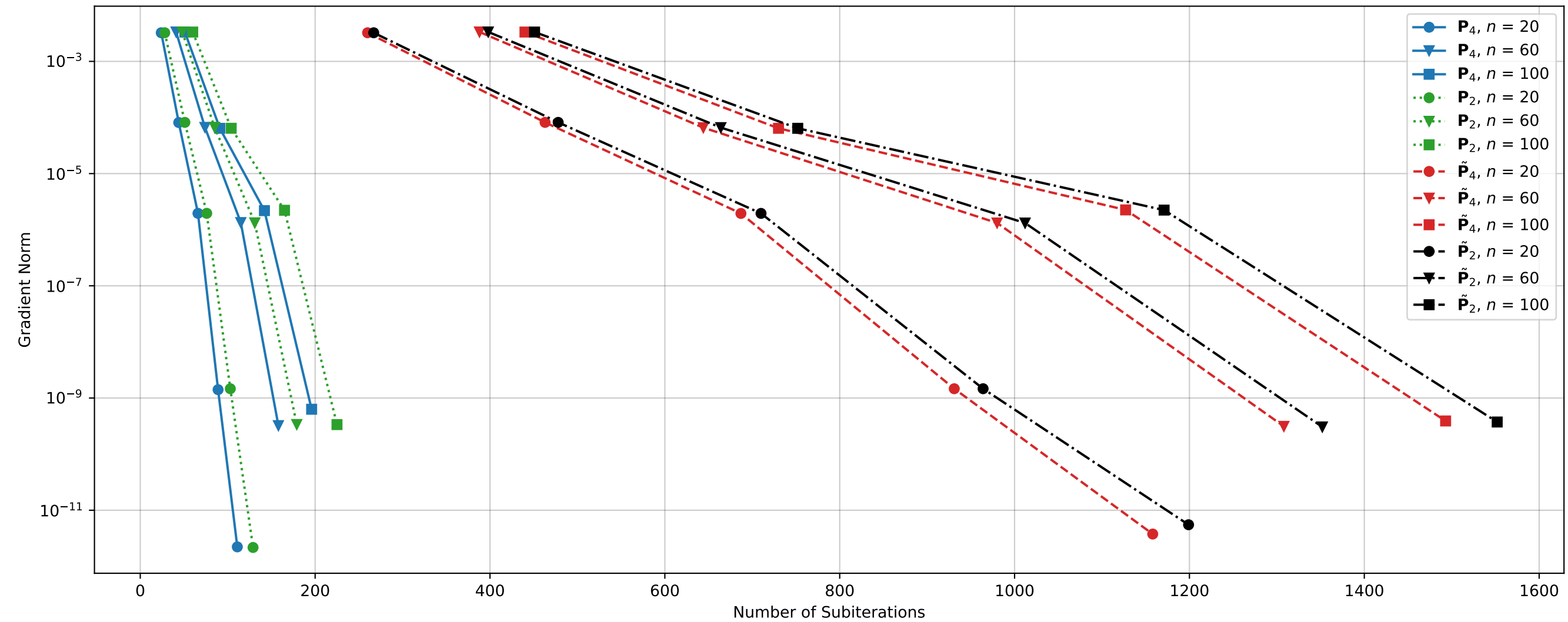
Full-space with $\tilde{\mathbf{P}}_2$ Gradient vs Design Cycles, $m = 4000$

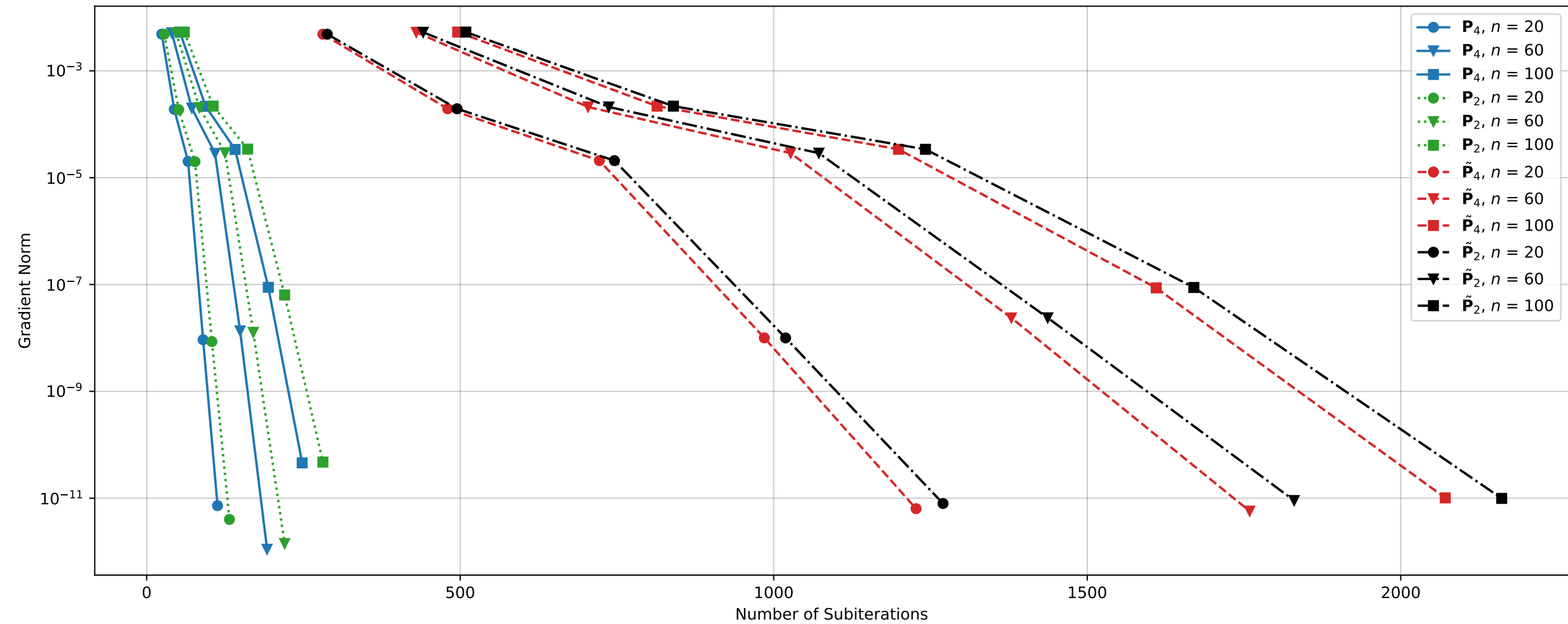


Full-space with $\tilde{\mathbf{P}}_2$ Gradient vs Design Cycles, $m = 9000$

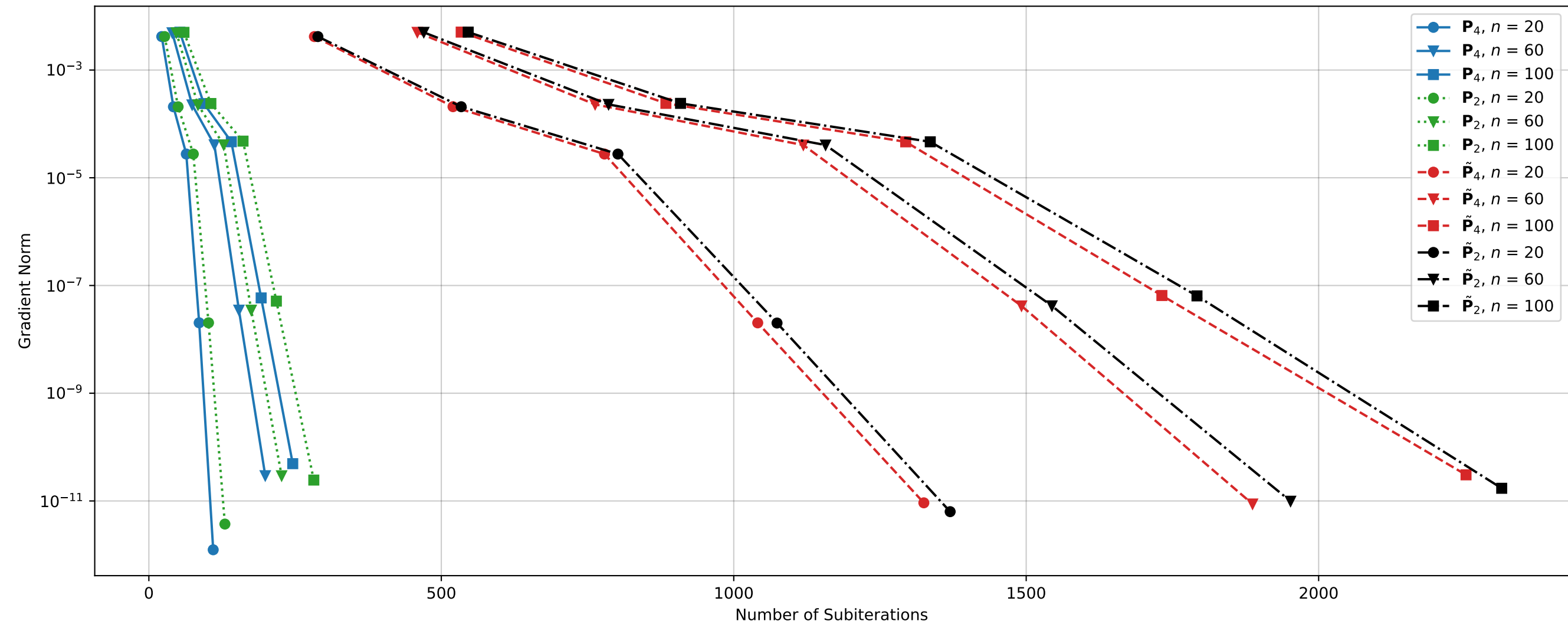


Full-space with $\tilde{\mathbf{P}}_2$ Gradient vs Design Cycles, $m = 16000$ 

Full-space Gradient vs Subiterations, $m = 4000$ 

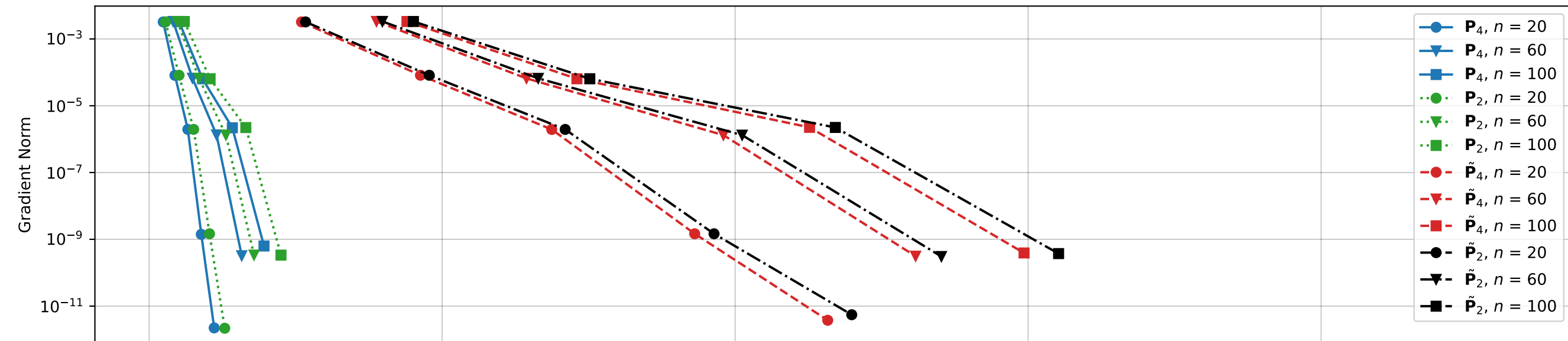
Full-space Gradient vs Subiterations, $m = 9000$ 

Full-space Gradient vs Subiterations, $m = 16000$

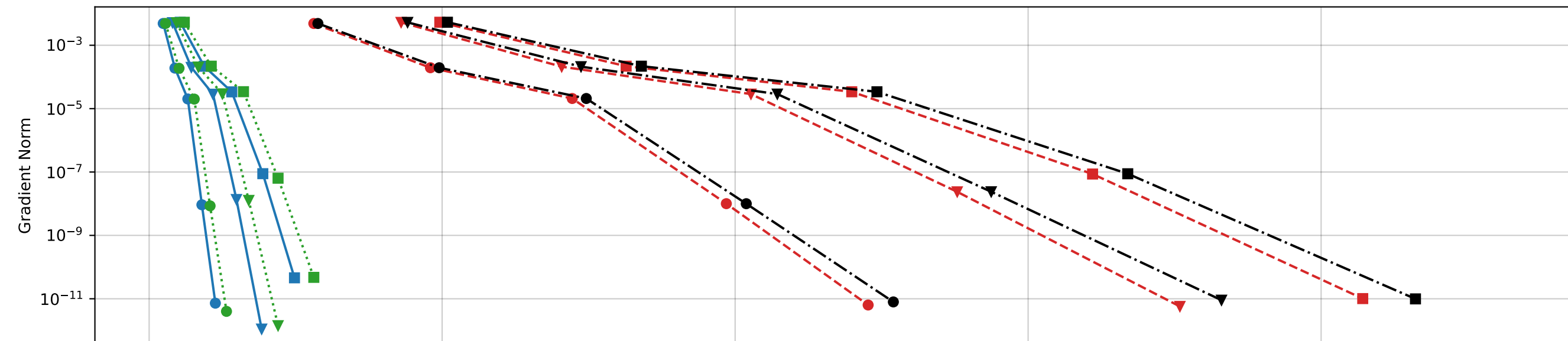


Full-space Gradient vs Subiterations

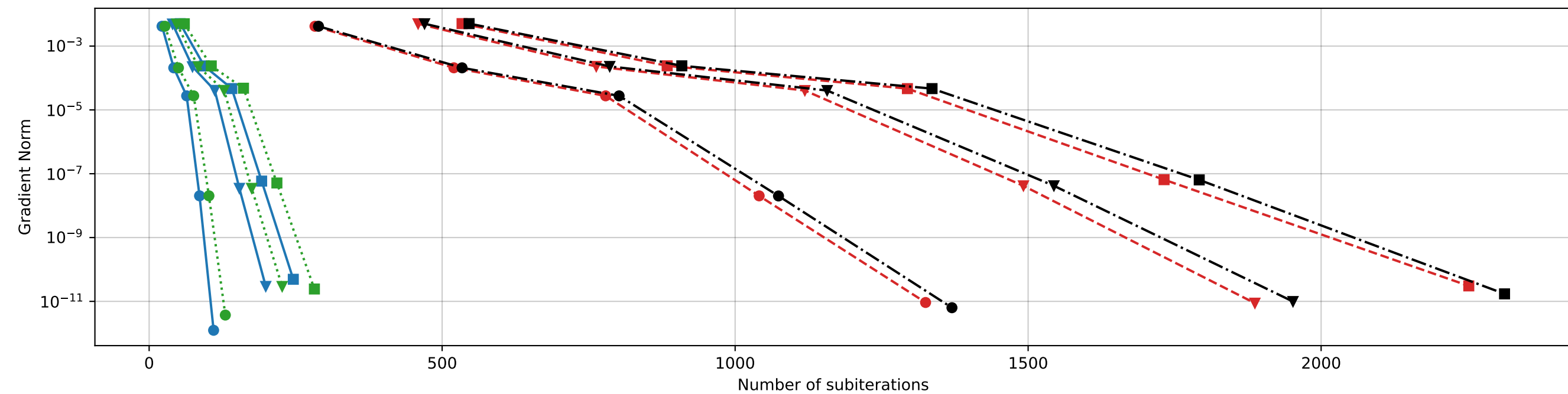
$m = 4000$



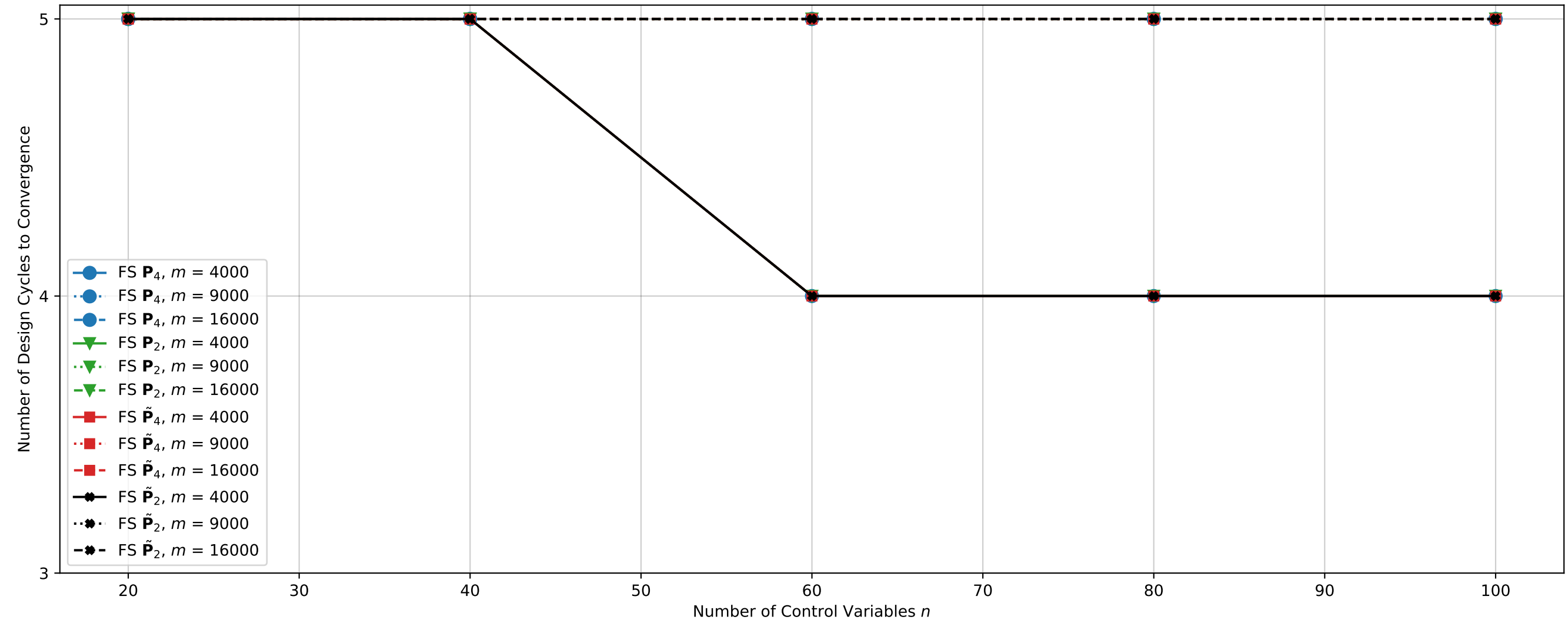
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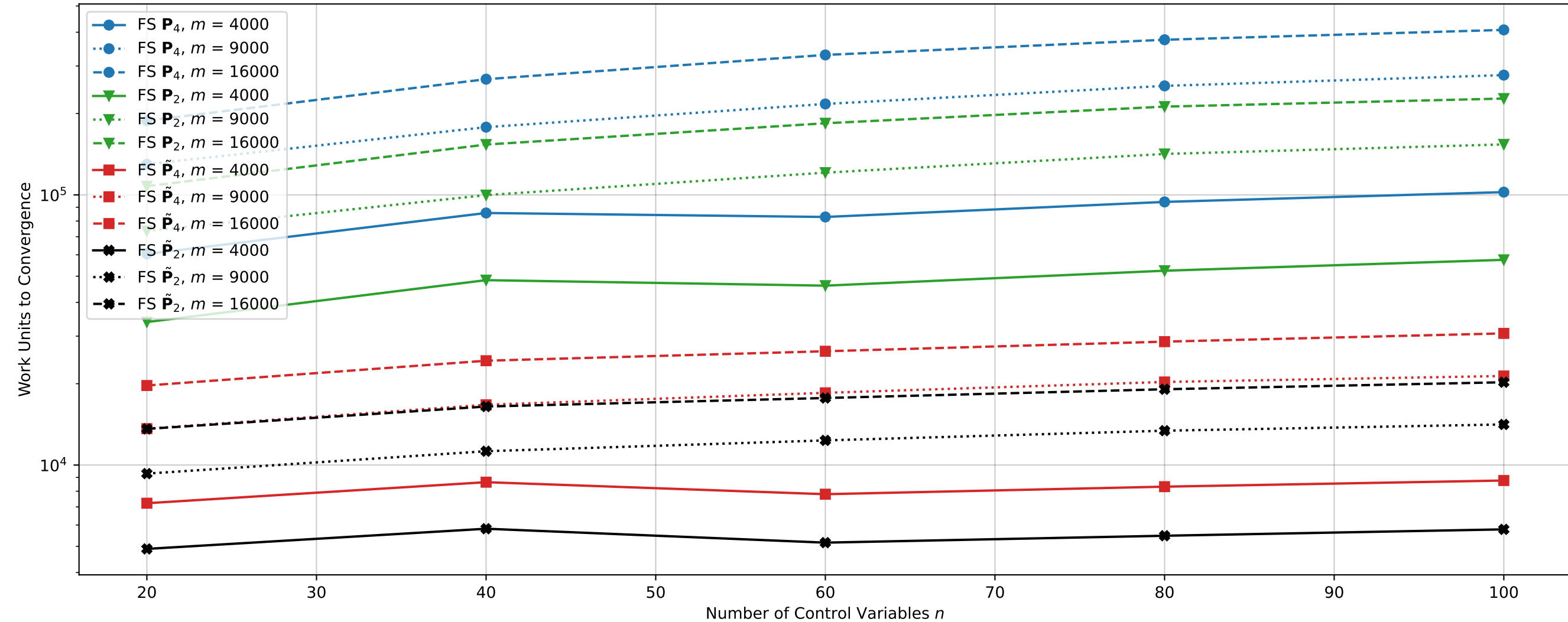
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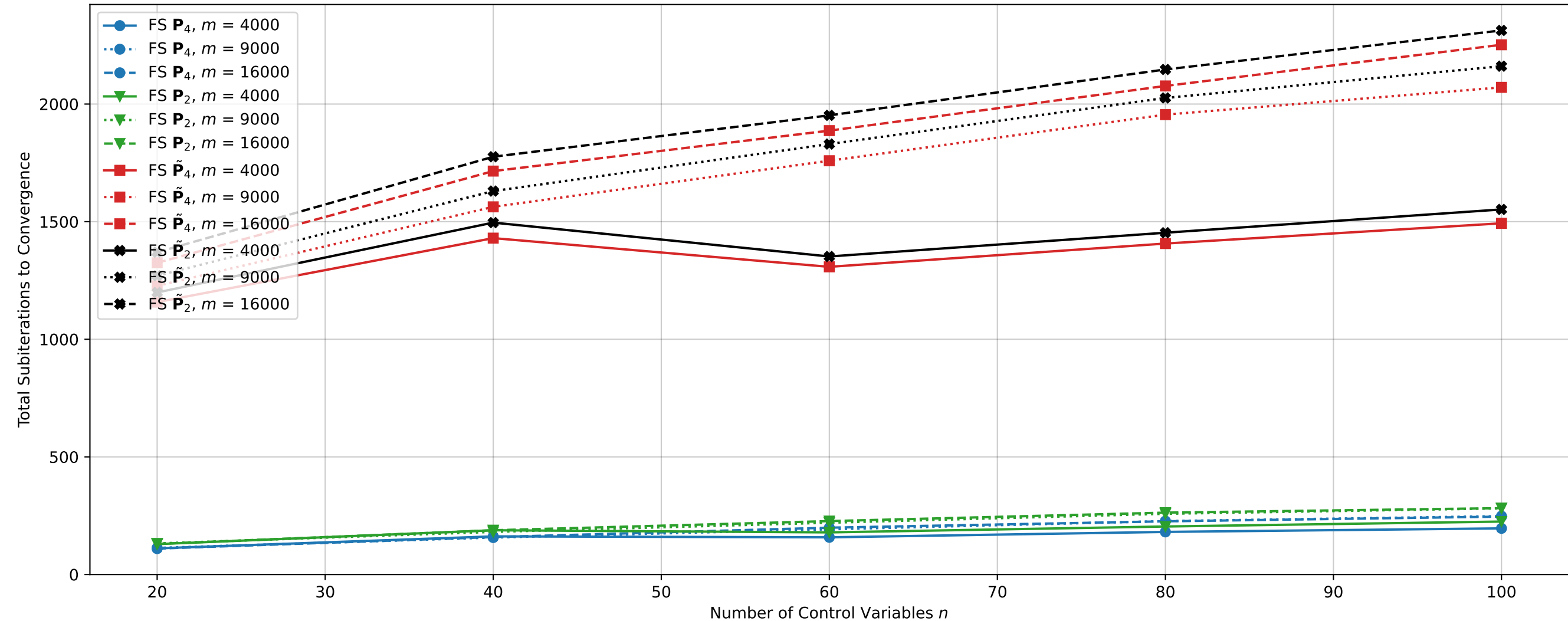
Full-space Design Cycles vs Control Variables



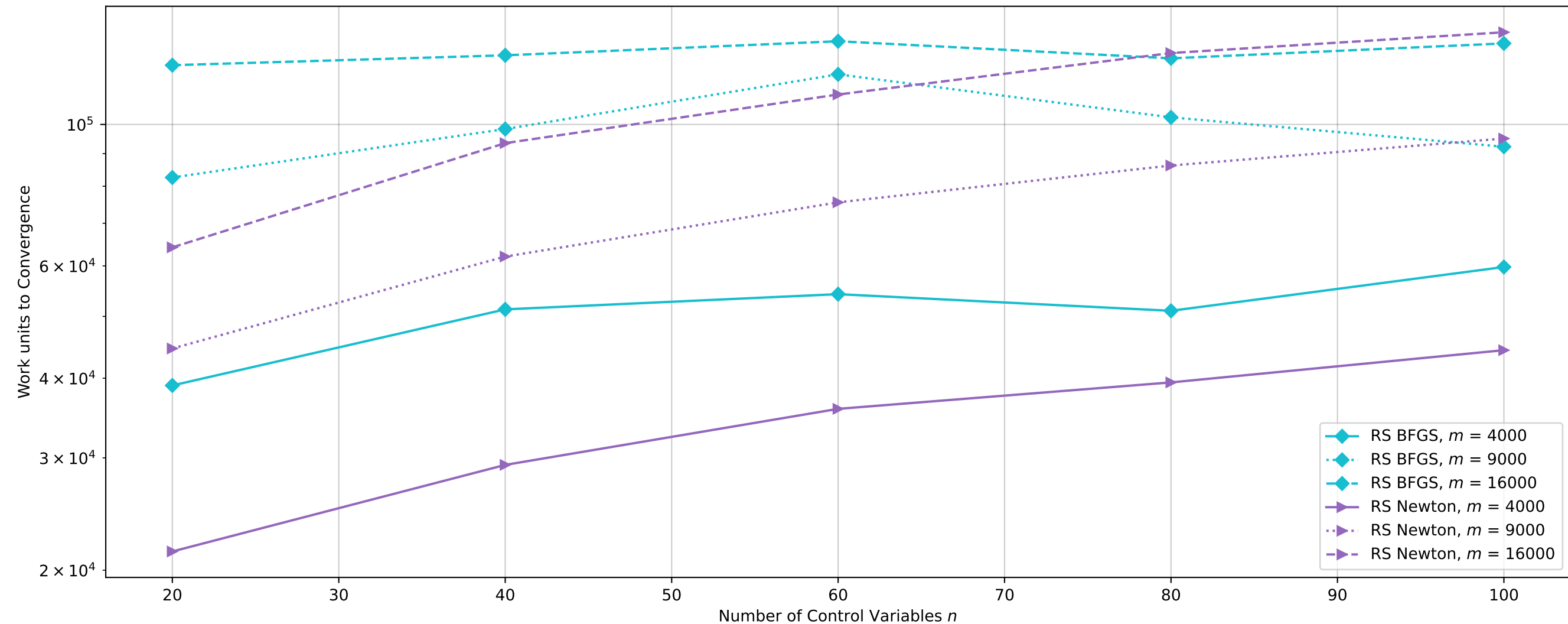
Work Units vs Control Variables



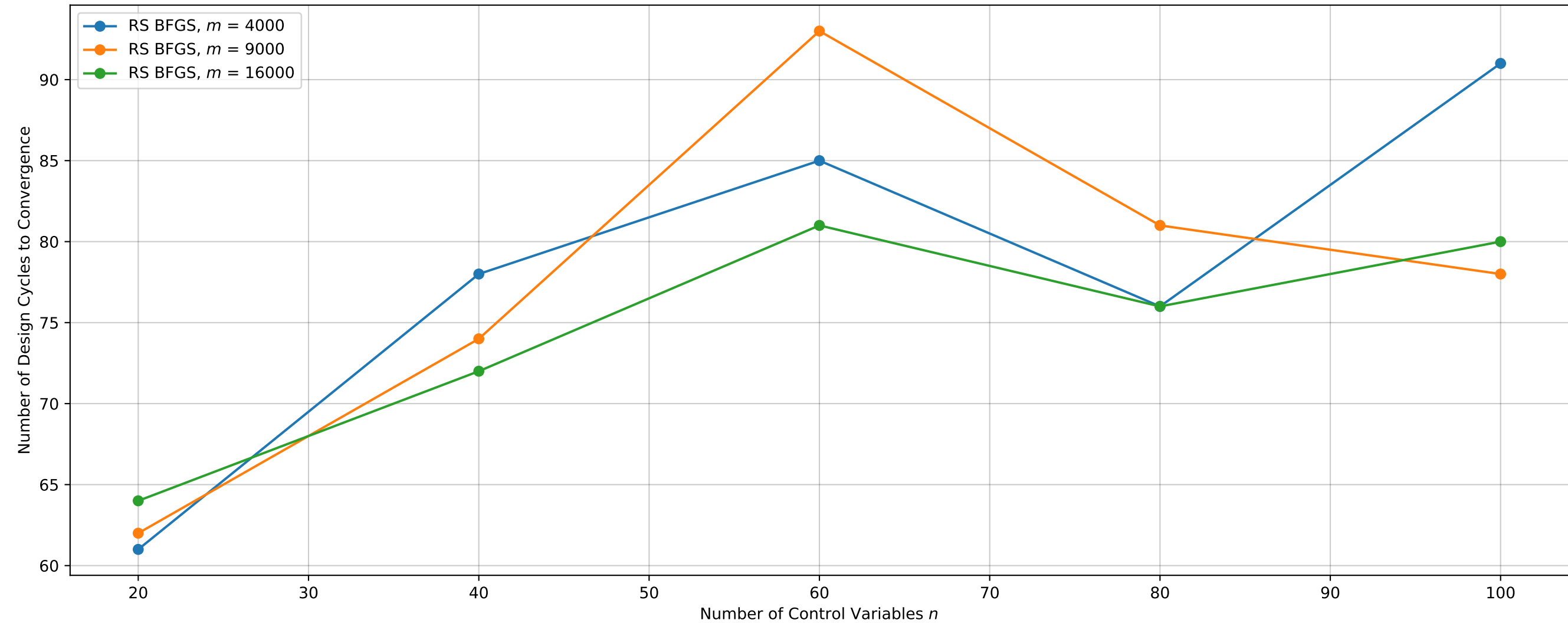
Total Subiterations vs Control Variables



Work Units vs Control Variables

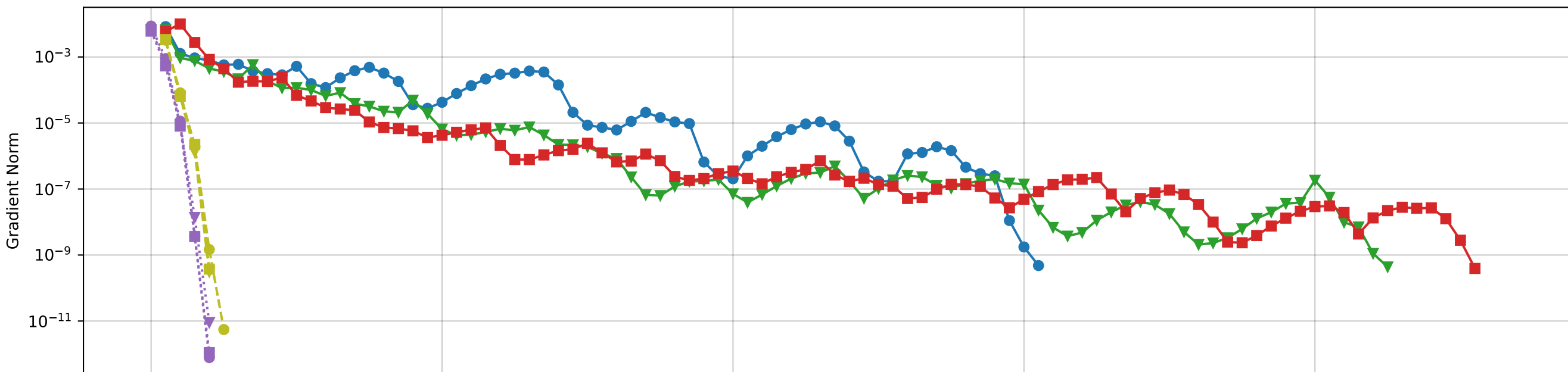


Reduced-space Design Cycles vs Control Variables

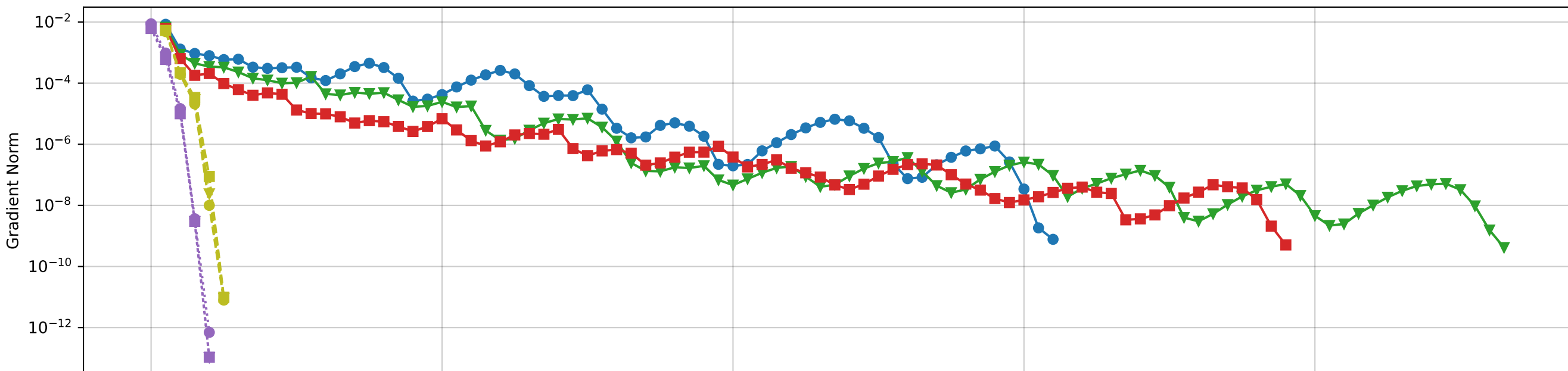


Reduced-space Gradient vs Design Cycles

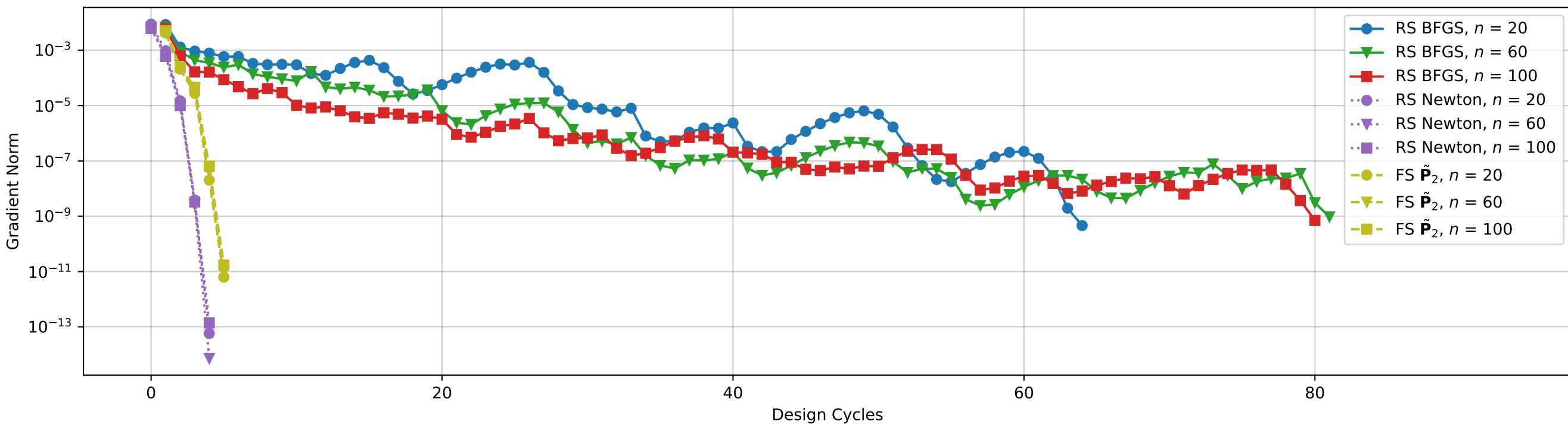
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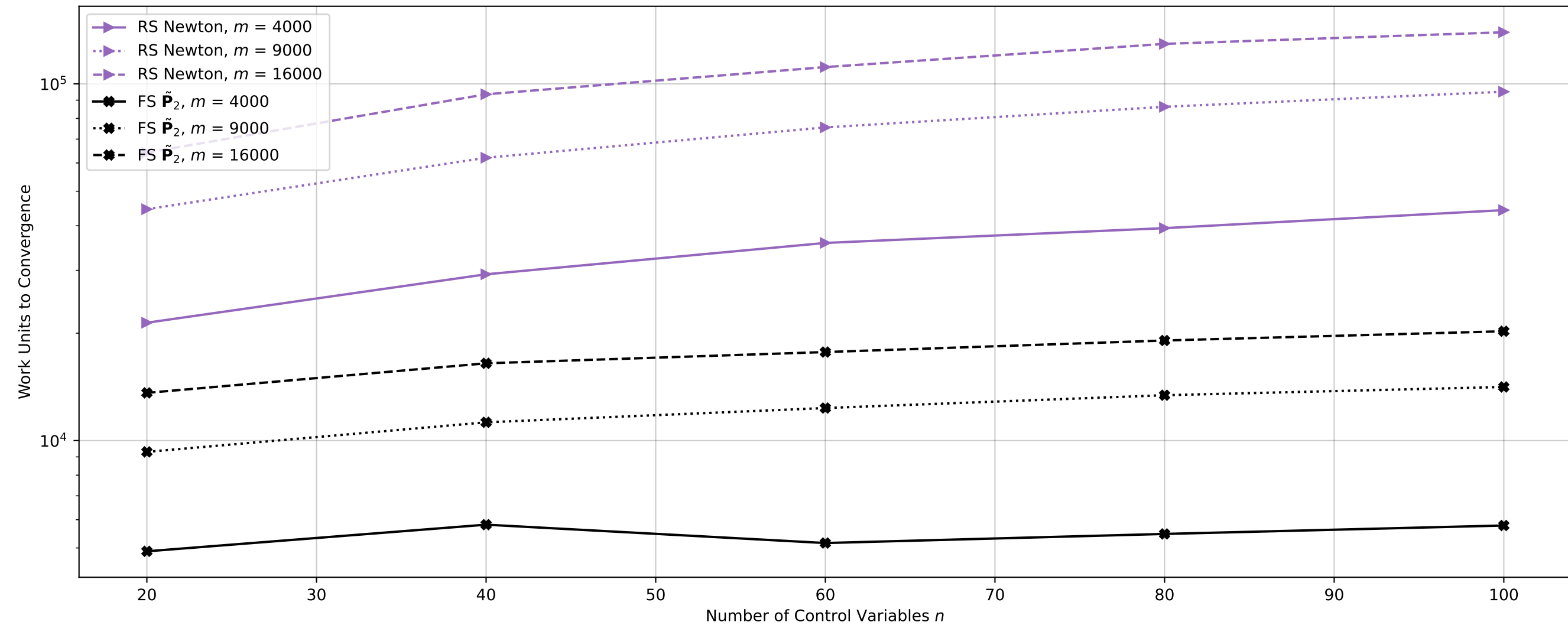
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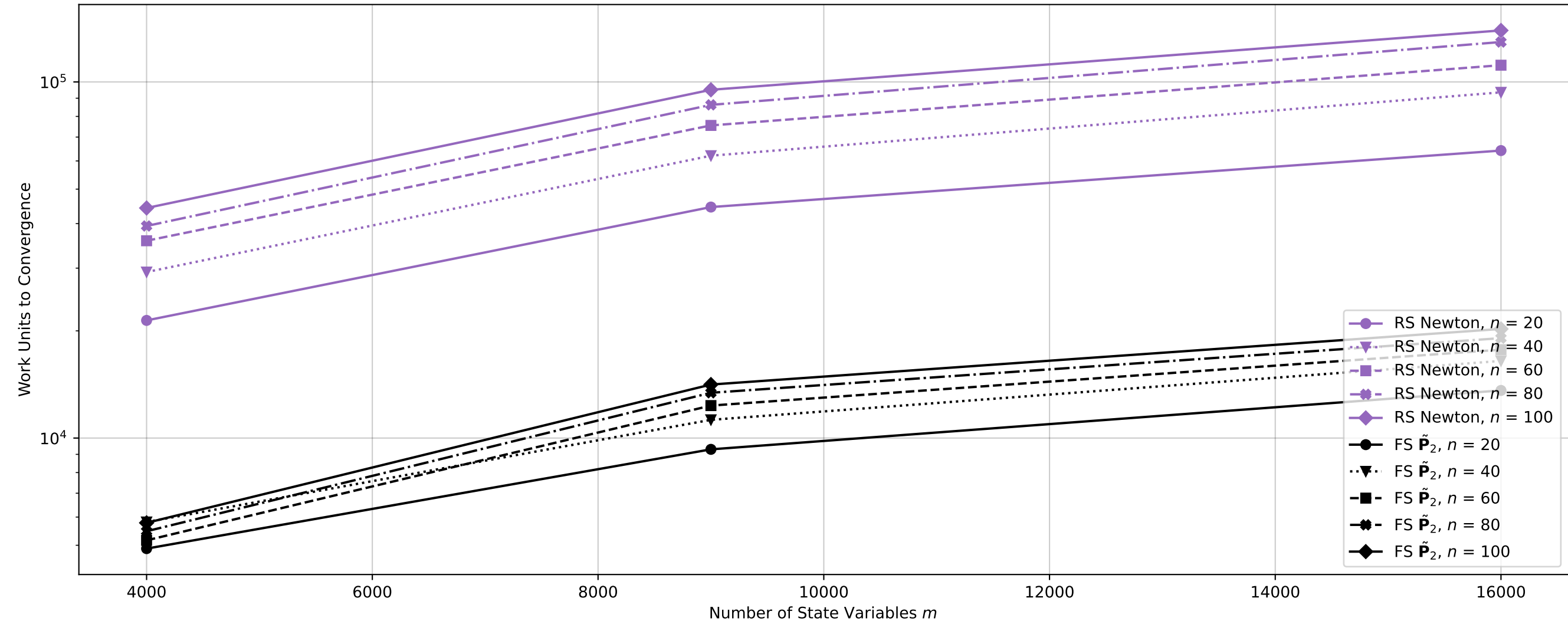
$m = 16000$



Work Units vs Control Variables



Work Units vs State Variables



Gradient Norm vs Design Cycles $m = 4000$

