Checklist

1. For all authors...

   (a) Do the main claims made in the abstract and introduction accurately reflect the paper's contributions and scope? [Yes] The abstract and the introduction do provide a concise statement of the original result proved in this paper.

   (b) Did you describe the limitations of your work? [Yes] The limitations of our work are explicit as we described in 3 the subclass of MDPs on which the theorem applies.

   (c) Did you discuss any potential negative societal impacts of your work? [No] This work is mainly of mathematical nature and we hope that it has a very little direct societal impact.

   (d) Have you read the ethics review guidelines and ensured that your paper conforms to them? [Yes] We confirm that our paper complies with the ethical guidelines of Neurips.

2. If you are including theoretical results...

   (a) Did you state the full set of assumptions of all theoretical results? [Yes] All assumptions and the context of the theorem are provided in 2 and 3.

   (b) Did you include complete proofs of all theoretical results? [Yes] A sketch of the proof is given in 4.3 and the complete proof is given in the supplemental material.

3. If you ran experiments...

   (a) Did you include the code, data, and instructions needed to reproduce the main experimental results (either in the supplemental material or as a URL)? [N/A] There is no experiment in this paper.

   (b) Did you specify all the training details (e.g., data splits, hyperparameters, how they were chosen)? [N/A] There is no experiment in this paper.

   (c) Did you report error bars (e.g., with respect to the random seed after running experiments multiple times)? [N/A] There is no experiment in this paper.

   (d) Did you include the total amount of compute and the type of resources used (e.g., type of GPUs, internal cluster, or cloud provider)? [N/A] There is no experiment in this paper.

4. If you are using existing assets (e.g., code, data, models) or curating/releasing new assets...

   (a) If your work uses existing assets, did you cite the creators? [N/A] We did not work with existing assets or new assets.

   (b) Did you mention the license of the assets? [N/A] We did not work with existing assets or new assets.

   (c) Did you include any new assets either in the supplemental material or as a URL? [N/A] We did not work with existing assets or new assets.

   (d) Did you discuss whether and how consent was obtained from people whose data you're using/curating? [N/A] We did not work with existing assets or new assets.

   (e) Did you discuss whether the data you are using/curating contains personally identifiable information or offensive content? [N/A] We did not work with existing assets or new assets.

5. If you used crowdsourcing or conducted research with human subjects...

   (a) Did you include the full text of instructions given to participants and screenshots, if applicable? [N/A] We did not work with human subjects.

   (b) Did you describe any potential participant risks, with links to Institutional Review Board (IRB) approvals, if applicable? [N/A] We did not work with human subjects.

   (c) Did you include the estimated hourly wage paid to participants and the total amount spent on participant compensation? [N/A] We did not work with human subjects.