The manuscript proposes a novel CS-based DOA estimation framework, which integrates several key components, including a noise elimination preprocessing module, a cosine-similarity-based adaptive step-size mechanism, and a filtering strategy to remove invalid negative estimations. Simulation results demonstrate noticeable performance improvements over conventional algorithms, indicating the effectiveness and potential of the proposed approach.

While the proposed framework is interesting, there are several important concerns that should be addressed to further improve the quality of this manuscript:

The authors claim that conventional algorithms can only operate in low-frequency bands; however, the specific challenges introduced by THz bands are not clearly articulated. A more comprehensive and in-depth discussion of these challenges is necessary to substantiate the motivation for the proposed method. Furthermore, the authors state that the proposed method provides a valuable reference for THz ISAC systems. However, no communication functionality or system-level consideration is presented in this manuscript. It is recommended that the authors revise the expressions to be more precise and technically grounded, rather than making broad, unsubstantiated references to popular research topics.

The overall presentation of the manuscript is somewhat difficult to follow and requires significant improvement. In particular, the formatting of variables is inconsistent throughout the manuscript. The use of boldface and italic letters is irregular, which affects readability and clarity.

The figures are too small to be clearly visible. The authors are encouraged to improve the quality and size of the figures to enhance readability.

The manuscript lacks clear definitions of important notations. For example, the meanings of the "candidate set" and "support set" are not explicitly provided. Similarly, the definition of Ω in Algorithm 1 is missing. These should be clearly stated to ensure the manuscript is self-contained and understandable.

From Figure 3b, it appears that the performance gains of the proposed algorithm are mainly attributed to the negative-value filter. It remains unclear whether the preprocessing module and adaptive step-size mechanism contribute to the performance improvement. The authors are advised to conduct ablation studies to isolate and quantify the contributions of different components within the proposed framework.

The manuscript lacks convergence and computational complexity analysis, which makes the technical content incomplete from the reviewer’s perspective. The authors attempt to demonstrate computational efficiency using average runtime in simulations; however, this approach is insufficiently rigorous. Average runtime is influenced by factors beyond algorithmic complexity, such as code implementation and hardware configuration. Therefore, a formal theoretical analysis of computational complexity is necessary to properly support the claimed efficiency.