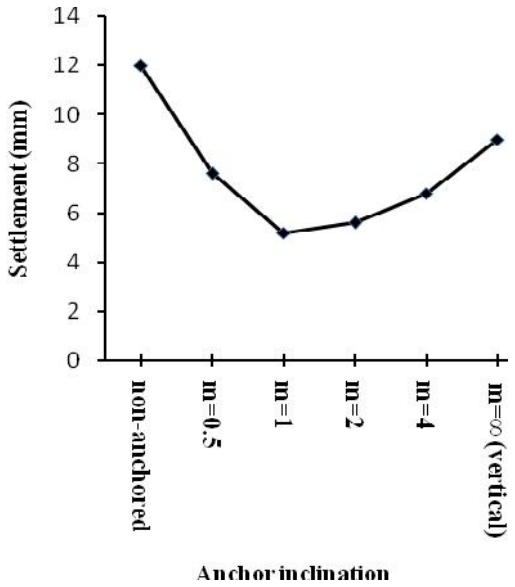

Fig. 7. Settlement versus non-anchored and anchored foundation with different inclination of anchors.

IV. CONCLUSION

Based on results obtained from the numerical study carried out on circular foundation witch anchored with different inclination in sand, the following conclusions are drawn:

Presence of anchor enhances the uplift bearing capacity of foundation and its efficiency depends on anchor inclination, significantly. Bearing capacity of foundation increases by increasing the slope of anchors up to m=2 (slope: 2 vertical – 1horizontal) and after this threshold decreases. However, the strength of anchored foundations is more than the non-anchored cases.

Among the anchored foundations, vertical and m=2 orientation of anchor have minimum and maximum effect on increasing uplift bearing capacity, respectively.

Anchors have not significant effect on the improvement of bearing capacity of foundation under the downward loads. However, the anchoring decreases the foundation settlements, prominently. By increasing the slope of anchor up to m=1 (1:1), settlement decreases and after this threshold increases.

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