



Bilkent University  
Department of Mathematics

## PROBLEM OF THE MONTH

**Term:** December 2019

Find the maximal value of

$$8abc \left( \frac{1}{a^2 + 1} + \frac{1}{b^2 + 1} + \frac{1}{c^2 + 1} \right) - a - b - c$$

where  $a, b$  and  $c$  are positive real numbers satisfying  $ab + bc + ca \leq 1$ .