

## Extension of plurisubharmonic functions with logarithmic growth

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Let  $X$  be an algebraic subvariety of  $\mathbb{C}^n$  and  $\overline{X}$  be its closure in  $\mathbb{P}^n$ . Coman-Guedj-Zeriahi proved that any plurisubharmonic function with logarithmic growth on  $X$  extends to a plurisubharmonic function with logarithmic growth on  $\mathbb{C}^n$  when the germs  $(\overline{X}, a)$  in  $\mathbb{P}^n$  are irreducible for all  $a \in \overline{X} \setminus X$ . In this talk we will consider  $X$  for which the germ  $(\overline{X}, a)$  is reducible for some  $a \in \overline{X} \setminus X$  and we give a necessary and sufficient condition for  $X$  so that any plurisubharmonic function with logarithmic growth on  $X$  extends to a plurisubharmonic function with logarithmic growth on  $\mathbb{C}^n$ . We will also give some examples of varieties on which extension with same growth is possible or not.