

## SHORT RANGE AND LONG-RANGE FORCES IN INDUCED STAR FORMATION

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The characteristic features of star-forming systems with prevalence of effects of induced star-formation (SF) are considered. Several mechanisms of induced SF are known: stimulation by stellar activity, by spiral density waves, by galactic mergers and tidal interactions. Properties of such systems can be described by four basic models: (i) self-regulated wave of SF; (ii) self-regulated starburst; (iii) SF-wave and (iv) starburst stimulated by external influence. In the first two cases, excitation of SF is caused by activity of stars of previous generation.

The character of induced SF is determined by scales of exciting forces. Namely short-range forces cause wave-like SF and long-range forces promote global starburst. There are two different mechanisms of SF initiation in star-forming systems with self-regulation: fragmentation of gas compressed by shock-waves with short-range action ( $\approx 30\text{pc}$ ), and excitation of implosion of gaseous condensations by unobscured UV photons with  $\lambda > 912 \text{ \AA}$  (and/or cosmic rays) from active stars with efficiency varying as  $r^{-2}$ . The latter is able to provide an initiation of SF on large scales (100-300pc), and hence in this case the SF process may spread over the whole system in a short time. Such kind of SF will be observed as a starburst. Under certain conditions these two exciting forces are capable to ensure hierarchic structure of star systems, such as star complexes, associations and aggregates.